

The IRON AGE

WORKS
ESTABLISHED
1836.



FARM
& GARDEN
IMPLEMENT^S

VAUGHAN'S SEED STORE,

14 BARCLAY ST., NEW YORK,

84 & 86 RANDOLPH ST., CHICAGO,

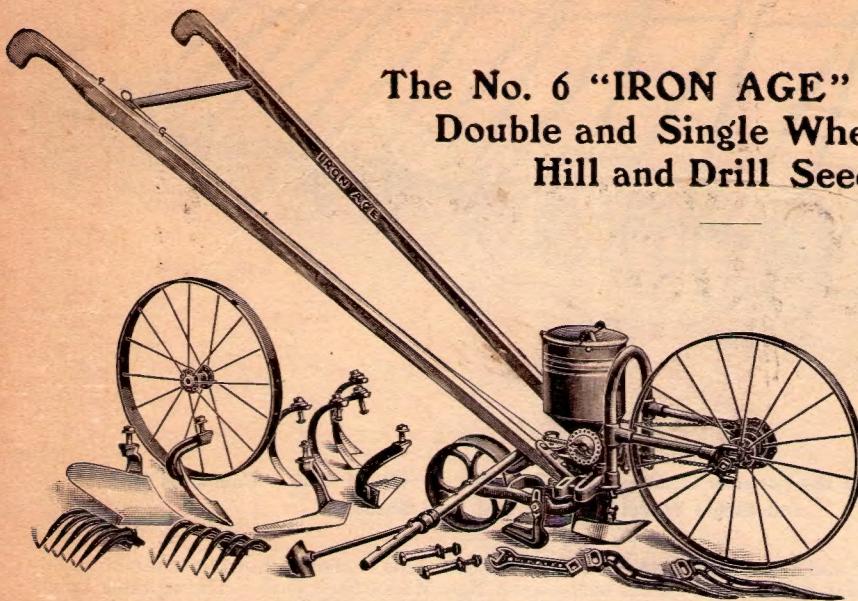




THE season just ended has been an exceedingly busy one for us, —a greater number of Iron Age tools has gone from our factories than during any previous year in our history, a much larger list of dealers have sold them, and a much wider scope of territory has become acquainted with the tools.

We believe we do not unduly flatter ourselves in taking this as evidence that farmers, planters, and all users of our goods have come to regard the Trade Mark "Iron Age" as representing an honest, earnest effort on the part of a manufacturer to give the *best* in quality, efficiency and workmanship. We are glad to feel this to be the case and it will incite us to greater efforts to produce tools and implements which will lessen the labors and increase the profits of our brother laborer—the farmer.

We invite your careful attention to the following pages, where we endeavor to show in a plain, careful way, by cuts and descriptions "just as they are,"—the well known "Iron Age" tools.



The No. 6 "IRON AGE" Combined Double and Single Wheel Hoe, Hill and Drill Seeder

Price, \$10.00

Packed Weight, 50 Pounds

Hill and Drill Seeder only (No. 7).
Price, \$7.50

Fig. 114

Combined Double Wheel Hoes and Seed Drills

Prior to the introduction of our famous Combined Wheel Hoes and Seed Drills, combined tools were regarded by many as impracticable, owing to the time and knowledge required to change from one form to the other, to say nothing of the advantages lost over those of the separate implement.

The simplicity and completeness of the "IRON AGE" combined implements in all their forms make their use practical, even with the busiest gardeners.

From Seed Drills these tools can be converted into Wheel Hoes, either Single or Double, it requiring but about three minutes to change to Double Wheel Hoes and about two minutes to Single Wheel Hoes, by an inexperienced operator. T. Greiner, a practical gardener and a well-known writer on garden subjects, writes as follows :

"I have used the 'IRON AGE' Combined Double Wheel Hoe and Seed Drill for three seasons, and I can truly say that it has made the task of sowing seeds (which always falls upon me personally) a veritable pleasure. I do not know of any weak point in this machine; at present I use no other make of garden drill. I used to be very pronounced in favor of single tools, for the reasons that in the combined tools one wore out two tools at a time and had to waste much time in making the changes from Drill to Wheel Hoe and vice versa. The 'IRON AGE' meets these objections quite successfully, the former fully, the latter to a great extent. When the Wheel Hoe is wanted, the Drill part is taken entirely off and the change made in a minimum of time."

We show in cut above our No. 6 "Iron Age" Combined Double Wheel Hoe, Hill and Drill Seeder, being the same as our well-known No. 4 Drill, with the addition of a hill dropping device.

The completeness of the tool and the universal satisfaction it has given places it first among our list of garden implements. Combined in this tool, as will be further explained, there are three distinct and thoroughly practical tools, a Hill and Drill Seeder, a Double Wheel Hoe and a Single Wheel Hoe.

Hill and Drill Seeder

The Wheel is made of steel, 16 inches high ; of steel to obtain lightness, and at the same time strength ; 16 inches high in order to run easy, without giving to the inequalities of the soil as a low wheel will do.

The Frame is made of pipe, coupled to malleable castings ; of pipe to again secure lightness and a frame of such shape and strength to make it practically unbreakable.

The Seed-Sowing Device—In designing our Seed-Sowing Device we have kept in view simplicity of construction, convenience of adjustment and perfection of work.



Representing Some of the Forms or Combinations of the No. 6 "IRON AGE" Combined Double and Single Wheel Hoe, Hill and Drill Seeder.

The seed slide and its index adjustment to sow various seeds is plainly shown in cut below, Fig. 146, and is similar to that used on our well-known New Model Seed Drill. The agitator is simply a revolving brush of selected bristles, which absolutely will not injure the seed, wear a long time and can be cheaply replaced. The brush agitator will be found to be peculiarly adapted to feeding out such seeds as beets and tomatoes, in separating the seeds that may be clinging together and acting as a gentle force feed. It will distribute small packets of seed with the same uniformity as a large quantity. The seed hopper holds 2 quarts. The range of variety of seeds capable of being sown with this drill is larger than other drills because of the separating qualities of the brush agitator.

In our experience with Seed Drills, we have found that while some round, smooth seed, such as turnip or radish, will flow through the discharge opening and do not, therefore, need any agitator, one is absolutely necessary for some others to insure a continuous or positive feed.

All seeds such as celery, radish, lettuce, beet, onion, carrot, spinach, chickory, cabbage, peas, etc., can be sown with this drill.

Besides placing the seeds in drills, our No. 6 will also drop in hills at 4, 6, 8, 12 or 24 inches apart. The tool can be instantly changed to drop from hills to drills or the reverse.

The Cut-off.—The flow of seed can be instantly stopped by a *swinging* cut-off, conveniently operated by a cord and ring on handle. This cut-off prevents all loss of seed at end of rows, and its swinging or gravity form will be found far preferable to one that slides under, as it cannot be jammed by the falling seed.

The Opening Plow is clog-proof, all trash which may come in contact with it is ridded down. By a thumb screw it can be instantly adjusted in depth. Distributes the seed in a very straight and narrow row making it possible to cultivate very close to the plants by the Wheel Hoe.

A Special Plow for sowing onion seed for sets is shown in Fig. 145. It scatters the seed in a row over 3 inches wide, and will fit our Nos. 6, 7, 15, 16 and 22 drills. Price, 50 cents.

The Marker is pivoted at the rear of the hopper and can be thrown from side to side by the foot, and the adjustment of the drag be made by inches from 6 to 20 inches wide.

The Coverers are flexible to prevent clogging with the trash or lumps.

Sugar Beet and Chicory growers will find this tool to meet every requirement. It will sow the seed accurately and without injury. The arch being high will allow the cultivation of these crops until they are well grown. A very large number of these tools now being used by prominent growers, where the best tools for the purpose are required, is the highest recommendation we can give them.

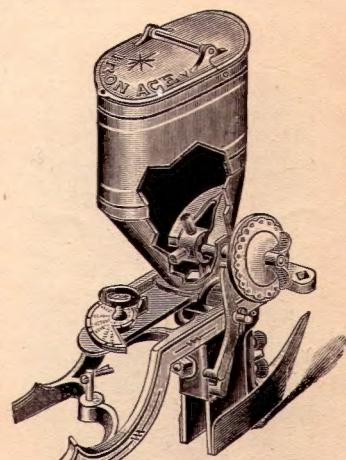


Fig. 146

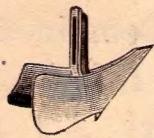


Fig. 145

is fully given on page 10, let us state briefly some of their merits here for the accommodation of the hasty reader.

Since the wheels and frame of the tool, either in the form of a Hill and Drill Seeder, a Single or a Double Wheel Hoe, are identical, the reader is already informed by mention of same, on page 1, of the construction and meritorious points of the tool in this particular. We also here wish to say, the fact that every Double Wheel Hoe can be easily and quickly converted into a thoroughly practical Single Wheel Hoe makes the tool adapted for a greater variety of work, and makes it possible to change our No. 6 Combined Double Wheel Hoe, Hill and Drill Seeder into as many single wheel combinations as it is possible to make it into double wheel combinations.

The photograph shown at the top of opposite page forcibly impresses the mind of the almost unlimited number of different combinations into which this tool can be converted, without the use of additional attachments which may be applied to it, such as double weeder, landside plow, single tooth and onion set gatherer attachments. Truly, one who purchases a No. 6 Combined Double and Single Wheel Hoe, Hill and Drill Seeder, purchases a whole tool house; he is equipped to accomplish in the most satisfactory manner practically all work needed to be done by a kitchen or market gardener, or a farmer in the raising of vegetables which are to be cultivated by hand or for the sowing of seeds where afterwards the plants are to be cultivated by horse.

When we first offered our line of Wheel Hoes and Seed Drills built upon such principles as at present, some of the uninformed ridiculed the high steel wheel idea, claiming that it would not be practical; but the expressions coming to us from farmers and gardeners from all quarters of the earth of their hearty approval of tools so designed, and proven later on by their liberal orders, emphatically convince us that we were and still are correct in our ideas of the matter.

The No. 4 "IRON AGE" Combined Double and Single Wheel Hoe and Drill Seeder

Price, \$9.00

Packed Weight, 50 Pounds

As a Drill Seeder only (No. 5)

Price, \$6.50

What is previously said relative to our No. 6 Combined Double Wheel Hoe, Hill and Drill Seeder, is largely applicable to our No. 4. It only differs in the Seed Sowing Device and Opening Plow. Both tools as Double and Single Wheel Hoes are identical.

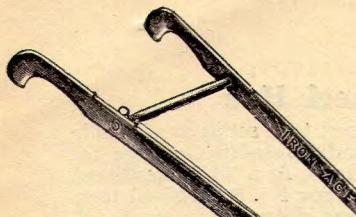
The seed Sowing Device of our No. 4 is only designed to sow seeds in continuous rows.

While for convenience sake and lessening patterns and stock in the manufacture of these tools, we would prefer to furnish all our Drills with the Hill Dropping Device, we have thought best not to deviate from our policy in this particular; namely, in giving the farmer just what he desires at the least possible cost, and not loading down the price of the tool with other devices, unless he desires them.

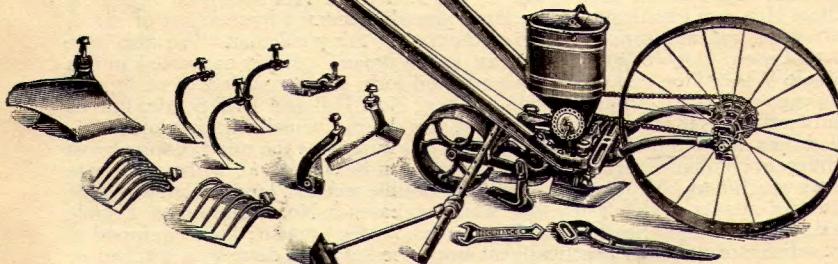
The Opening Plow is reversible, and also adjustable in depth.



Fig. 83



No. 15 "IRON AGE" Combined Single Wheel Hoe, Hill and Drill Seeder



Price, \$9.00

Packed Weight, 49
Pounds

Fig. 125

Combined Single Wheel Hoes and Seed Drills

Although we have offered in the past, in our Nos. 4 and 6 Combined Tools, implements which are complete both as Single and Double Wheel Hoes, there has been a demand for a combined tool to be operated as a Cultivator, only as a Single Wheel Hoe, both on account of preference and a desire for a lower priced combination. For a person who raises vegetables for his own use, and for the market gardener who prefers a Single Wheel Hoe to a Double Wheel Hoe, we offer our Nos. 15 and 17 Combined Tools.

Our Combined Single Wheel Hoes and Seed Drills will accomplish all manner of work without the purchase of additional attachments—ground may be plowed and raked, furrows made, seed sown and covered, plants hoed, cultivated and plowed.

As a Hill and Drill Seeder

The Wheel is made of steel, 16 inches high and has a broad faced tire, $1\frac{3}{4}$ inches; made on these principles, it goes a long way towards making the Seeder light, strong and easy running.

The Frame, made of iron tubing coupled to malleable castings, gives great strength combined with lightness, which is a very necessary thing in a tool which is to be pushed by hand.

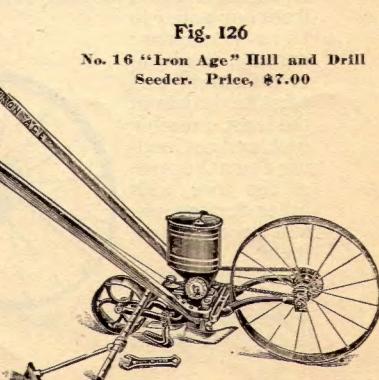
The Seed Sowing Device sows the seed in a continuous row, or drops in hills at 4, 6, 8, 12 or 24 inches apart. The change from one method to the other is instantly made. The index adjustment and revolving brush agitator are the same as used on all our "IRON AGE" Drills, of which there are many thousands being used by the leading gardeners, and pronounced by them "the best." The agitator not being made of iron, absolutely injures no seed. The opening plow is clog-proof, rides down all trash. Special opening plow shown in Fig. 145, page 3, for sowing onion seed for sets will also fit this tool. The marker is pivoted at the rear and can be thrown from side to side by the foot.

Our No. 15, as a Hill and Drill Seeder only, embodies *every good* feature of a tool designed especially as a Seed Drill. In this form, a plain Drill, we offer it as our **No. 16 "IRON AGE" Hill and Drill Seeder**, as shown in Fig. 126. A careful examination of the cut and description will convince one of its many good qualities.

Although this Seeder is one form of the Combined Tool, not a single advantage is contained in any Plain or Combined Seed Drill that this tool does not possess, while the conversion of it into a complete Single Wheel Hoe can, at any time, be accomplished by the purchase of the necessary cultivating tools.

Fig. 126

No. 16 "Iron Age" Hill and Drill Seeder. Price, \$7.00



As a Single Wheel Hoe

The change from a Seed Drill to a Wheel Hoe is made by simply detaching the Seed Sowing Device—done so by running the chain off the sprocket wheel, taking out of the frame two bolts, and attaching such cultivating tools as may be desired.

For cut and description of this tool in its Wheel Hoe form, see page 12, Fig. 135. All necessary tools, for accomplishing a great variety of work when operating the Wheel Hoe, are furnished with the combinations, such as Side Hoes, Cultivator Teeth, Rakes and Landside Plow.

The Single Weeder Attachment, as shown in Fig. 84, page 13, can also be applied to our Nos. 15 and 17, Combined Tools. **Price, \$0.75**

No. 17 "IRON AGE" Combined Single Wheel Hoe and Drill Seeder

Price, \$8.00

Packed Weight, 45 Pounds

Likewise, in our Single Combined Tools for the accommodation of those who have no preference for a Seed Drill to drop in hills as well as sow in rows, we offer a tool very similar to our No. 15 without the Hill Dropping Device, which we term our

No. 17 "IRON AGE" Combined Single Wheel Hoe and Drill Seeder, the price of which is one dollar less than No. 15. While, for convenience sake and lessening patterns and stock in the manufacture of these tools, we would prefer to furnish all our Drills with the Hill Dropping Device, we have thought best not to deviate from our policy in this particular; namely, in giving the farmer just what he desires at the least possible cost, and not loading down the price of the tool with other devices, unless he desires them.

What we have said above relative to the Wheel Hoe form of our No. 15 Combined Tool, applies with equal force to our No. 17 Combined Tool, for as Wheel Hoes they are identical.

No. 18 "IRON AGE" Drill Seeder

As before stated our Combined Single Wheel Hoe, Hill and Drill Seeder, as a Hill and Drill Seeder only, possesses every advantage of a separate Seed Drill, made especially as such; therefore, our Combined Single Wheel Hoe and Drill Seeder, as a Seeder only, possesses every advantage of a separate tool.

Our No. 17 Combined Tool, as a Seeder only, we offer as our No. 18, shown in Fig. 129. What is said on opposite page referring to our Combined Hill and Drill Seeder, as a Seeder only, is applicable to this, our No. 18 Seed Drill, save what is said about the Hill Dropping Device and opening plow.

Our No. 18, then as noted, is a most complete tool, embodying every good feature of all Plain Drill Seeders. The price at which we offer it makes it the lowest priced Drill we manufacture.



Fig. 127

Fig. 129

No. 18 "Iron Age" Drill Seeder
Price, \$6.00



No. 22 "IRON AGE" Combined Fertilizer Distributor, Hill and Drill Seeder

Price, \$16.00

Packed Weight, 65 Pounds

Net Weight, 50 Pounds

Another step in labor saving tools for market gardeners.

A Combined Fertilizer Distributor, Hill and Drill Seeder, Fig. 130.

A Fertilizer Distributor for side dressing of crops, Fig. 132.

In these days of strong competition in the growing of crops of the market gardener, it becomes necessary that he make a study of the most economical use of fertilizers, one of his most costly purchases, and to obtain this economy re-

quires such a tool as we offer in our No. 22 "IRON AGE" Combined Fertilizer Distributor, Hill and Drill Seeder, which applies the fertilizer in connection with the seed, just where it will do its most efficient work. Or, by the use of the same tool in its other form, No. 23 "IRON AGE" Fertilizer Drill as a Side Dresser, Fig. 132, by applying quick acting fertilizers to the growing plants, they can be forced into quick and vigorous growth. All of this is well known to the intelligent and successful market gardener of the present day.

Although a tool designed to accomplish so much, it is perfectly simple, light of draught, strong and perfection in the quality of work done by it,—its method of sowing the fertilizer and seed, or of sowing the fertilizer alone, is ideal.

The photo shown herewith was taken upon completing the planting of a 4-acre plot of lettuce, where at the same time fertilizer was distributed in two streams each side of the seed but not in contact with it. This gives a clear idea of how thoroughly practical the tool is, even when used on a large scale. The Wheels are of steel, 16 inches high, light and strong. It is needless to say that every ounce of weight must be saved in a tool of this kind.

The Opening Plows of the Fertilizer Distributor

are made of such shape as to encase the two flexible distributing tubes (one in each plow) leading from the fertilizer hopper. These plows are adjustable in depth and width, giving the gardener the privilege of placing the fertilizer as near or as far from the seed as he desires; or, one plow can be used and the fertilizer placed in the same line with the seed. The plows are immediately followed by coverers, which draw the soil over the fertilizer just deposited.

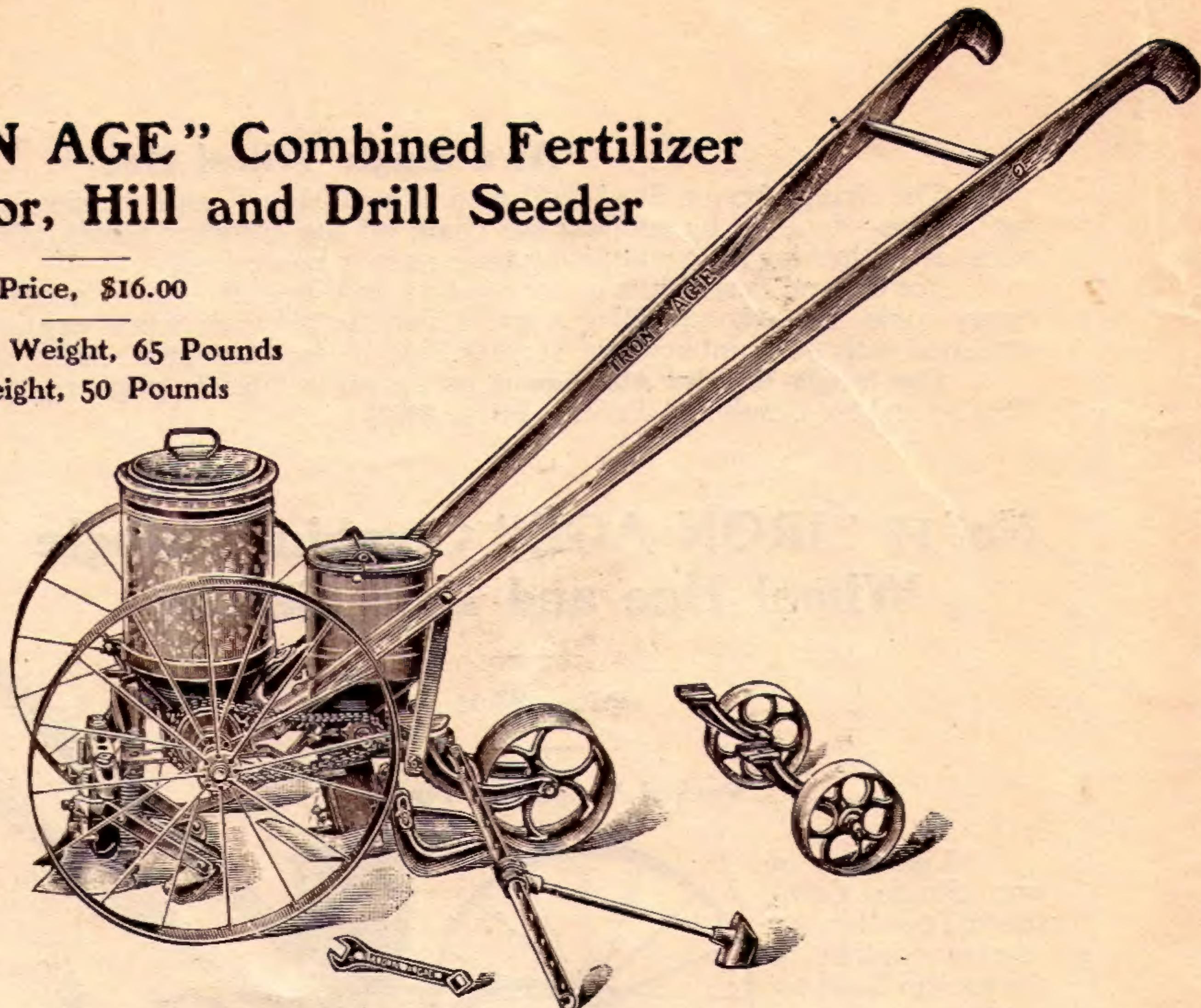


Fig. 130



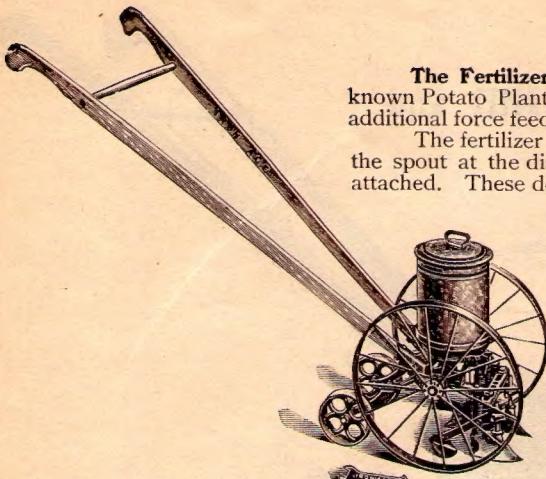


Fig. 132

The Fertilizer Distributor.—This is the distributor of our well-known Potato Planter on a smaller scale, with the exception of an additional force feed to prevent stoppage by small lumps.

The fertilizer is divided in two streams by a division made in the spout at the discharge opening, to which the delivery tubes are attached. These delivery tubes are made of brass spring wire, giving flexibility needed for the adjustment of the plows. To avoid rust all of the principal parts are galvanized. The capacity of fertilizer hopper is over four quarts.

The Seed Sowing Device is practically the same as used on our Nos. 6 and 15 Combined Seed Drills, having the same seed slide, index adjustment, and revolving brush agitator which injures no seed. The seed may be sown in Hills or Drills; in hills at 4, 6, 8, 12 or 24 inches apart. The tool can be instantly changed from a hill dropper to a continuous row drill. The opening plow is clog-proof. The coverers are flexible to prevent choking with trash or lumps. The operation and adjustment of the marker is plainly shown in cut. The seed hopper holds 2 quarts.

No. 23 "IRON AGE" Fertilizer Distributor (as a Side Dresser)

Price \$12.00. Packed Weight, 40 Pounds. Net Weight, 27 Pounds

Hill and Drill Seeder Attachment \$4.00

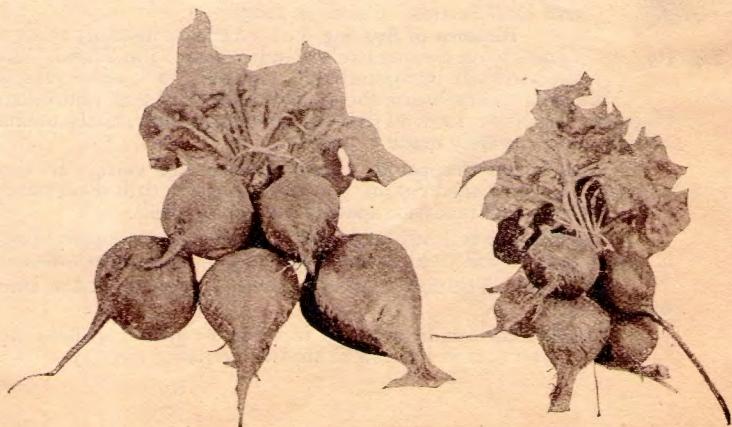
The side or top dressing of growing plants, especially at critical periods, has become a practice of great importance, and often of absolute necessity with the thrifty and progressive market gardener. It is not merely a matter of economical distribution of high priced fertilizer, but what is of more consequence, the placing of it just where the plant rootlets will quickly seize and absorb its chemical constituents.

A common and wasteful practice is the broad-casting of fertilizers before the seed is placed in the soil. Thoughtful farmers are not applying the full amount of fertilizer at the time of planting the crop, perhaps to be washed into the subsoils at the first heavy rain, but are making a number of applications of quick-acting fertilizers, such as Nitrate of Soda, during the growth of the plants. The quicker and more thrifty the growth of the plant, the more tender and more salable will be the crop,—the higher prices secured. The fact that your neighbor or fellow-farmer marketed his crop one week or ten days earlier than yourself last season, and perhaps at double the price, is probably due to the use of fertilizers in this way.

Note the relative size of beets shown in photographs. The larger ones show one result of side dressing with 500 lbs. Nitrate of Soda per acre in 4 applications; the smaller bunch, none.

By the use of this tool, Nitrates are placed below the surface in the moist soil, where they readily dissolve in a manner so easily and perfectly accomplished that it is a revelation to those accustomed to the slow, laborious, uncertain, and wasteful method of applying by hand. Furthermore by using this tool there is no danger of injury to the foliage of the plants by the fertilizer which often happens through the careless use of Nitrates when applied by hand.

The application of certain fertilizers is, therefore, not dependent upon the weather, which is the case when applied by hand, unless additional work is resorted to by opening furrows each side of the row and again covering after the fertilizer is sown. Applying the fertilizer in small quantities at different intervals lessens the chances of its total loss at the time of heavy rains; and by numerous applications food is constantly available which is essential for the best growth of the plant.



The No. 8 "IRON AGE" Hill and Drill Seeder

Price, \$9.00

Packed Weight, 40 lbs.

Market Gardeners will find the No. 8 "IRON AGE" Hill and Drill Seeder to fill a long felt need. Frequently have we heard farmers express their desire for a seed sower which would be simple, light, strong and capacious and also accurately drill and hill all the smaller seeds. Prior to the introduction of this tool, no Seed Drill was on the market which possessed all these qualities. We will endeavor to tell you in the following description the excellent qualities of the "IRON AGE," although to be fully appreciated this Seeder should be seen in actual operation, yet we feel confident our reader will agree with us, from reading the description given below, that the "IRON AGE" has more good qualities than any other tool of its kind.

The Wheel is fifteen inches high, and has a two-inch tread. Being made of steel it is much lighter and yet stronger than an old style cast iron wheel.

The Hopper is low, therefore the delivery of the seed is close to the ground, thus making possible accurate spacing. The capacity of this hopper is four quarts, holding a sufficient quantity of the most bulky seed for even the largest gardeners. Market gardeners and sugar beet growers will find this tool particularly well suited to their needs. The necessity for continually re-filling a hopper is aggravating, and when the tool is so light and easy running as this "IRON AGE" the extra weight of seed is not at all noticeable; particularly is this the case to one who has been accustomed to operating an old style, heavy, clumsy drill made mostly of grey iron.

The Agitator is a revolving brush which makes it absolutely a sure feed and sows all of the seed accurately and without injury.

The Opening Plow is of such shape as to render it positively clog-proof. All trash which may come in contact with it is ridden down. Its shape keeps it at all times highly polished. By a thumb screw it can be instantly adjusted in depth.

In Fig. 119 we show our special plow for sowing onion seed for sets. This plow sows the seed in a row over three inches wide. It is only applicable to our No. 8 Hill and Drill Seeder. Price, 50 cents.

Distance of Spacing the seed can be instantly changed by simply varying the number of pins in the outside circle of holes of the "Pin Wheel." By using only one pin (stationary) the seed will be spaced 24"; two pins, 12"; three pins, 8"; four pins, 6"; six pins, 4".

We wish to emphasize the great simplicity of this adjustment as it overcomes a very radical objection to similar tools of having numerous cam wheels to change. This adjustment can be quickly and accurately made by any boy.

From a Hill Dropper to a Row Drill or vice versa. By simply hooking out a small lever, which operates the seed cut off, you at once have a drill seeder and by reversing the operation you again have the tool ready for spacing the seed for hills.

The Coverer is firmly held in place by a spring, thus avoiding all danger of not covering, and at the same time will yield to any obstruction. The wheel rolls and packs the soil.

Shut Off.—The flow of seed can be instantly stopped or started by a convenient finger latch on the handle.

The Marker can be changed in width by inches, without the necessity of changing a screw or pin, and when not in use can be thrown up out of the way.

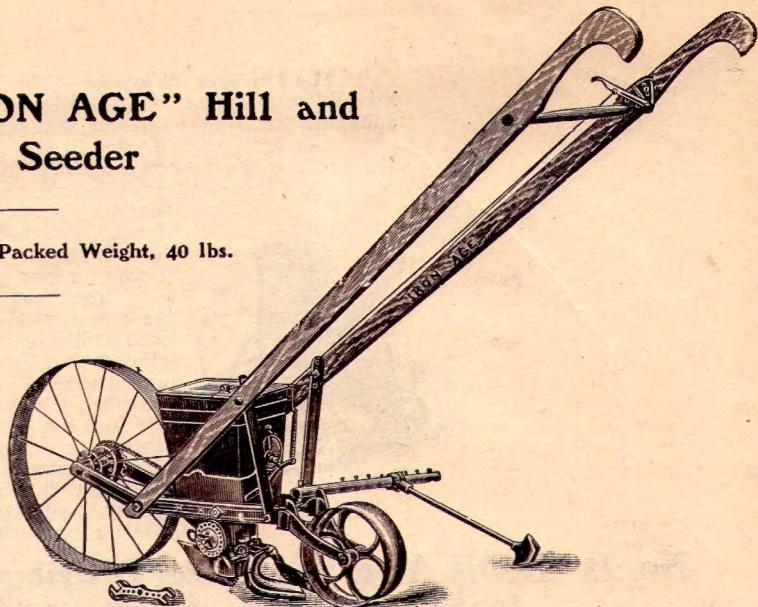


Fig. 95

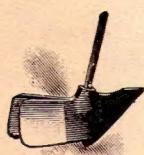


Fig. 119

The "NEW MODEL" Seed Drill

Price, \$7.00

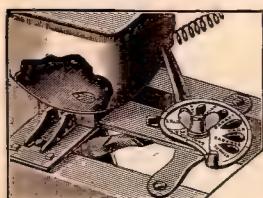
Packed Weight, 50 Pounds

The record of the "NEW MODEL" has been so entirely satisfactory, and its place as one of the leading drills has become so firmly established, that we are almost tempted to discard the term "New." It is surprising to see how quickly it has been adopted by the seedsmen and market gardeners as an old friend.

In reference to the "NEW MODEL" Drill, we do not think it necessary to enter into a discussion about the necessity for and economy in the use of Seed Drills. Farmers and gardeners generally, we believe, are now well enough posted to understand and fully appreciate all these points. Suffice it to say that the "NEW MODEL" is the result of careful experimenting in the field and factory, in close comparison with leading drills, and, being constructed with the view of avoiding all radical defects of said drills, built in a workmanlike manner, of best material and in neat style and finish, we venture to assert it will be found to be the *best seed drill in use* and indeed a *model* in every respect. We invite attention to some of the leading features of the "NEW MODEL."

Regulation of Discharge.—Drills of similar construction are usually provided with a series of holes of varying sizes through which the seed is passed, which, of course, do not always give an opening of the exact size required. The operator is usually told, in substance, that "if one hole don't suit, try another."

As will be readily seen, by reference to the sectional cut, this adjustment is accomplished in a very simple and effective manner by use of a slide with a pear-shaped opening, passing under the bottom of the seed reservoir, which is provided with a perforation of similar shape in a reversed position. This slide can instantly be adjusted to size indicated by Index, or to a *hair-breadth variation between*—a vital point in a perfect seed drill.



PERFECT INDEX

Fig. 29

Index.—As shown by enlarged cut in Fig. 29, the Index or Indicator is plain, convenient and reliable. It is placed in open sight, immediately under the eye of the operator, and, as stated above, can be quickly adjusted to the slightest variation desired. As the names of the principal seeds are plainly shown on the Index itself, it is not necessary to refer to any table of reference.

The sectional cut shows the perfect Index and manner of regulating the flow of seed by the slide, in connection with the index. It also shows the application of the swinging cut-off.

Cut-off.—The flow of seed can be instantly stopped by a *swinging* cut-off, conveniently operated by a cord and ring on handle. This cut-off prevents all loss of seed at end of rows, and its swinging or gravity form will be found far preferable to one that slides under, as it cannot be jammed by the falling seed.

Marker.—Is simple, easily adjusted and firmly held.

Wheel.—The main wheel is of large size and of *unusual* width, preventing its sinking into soft earth.

Covering Roller.—Is attached by swinging frame, enabling operator to roll lightly or otherwise, by varying the pressure on handles; or, as some object to use of roller, it, with its frame, can be quickly removed.

Opening Plow.—Is of *steel*, adjustable in depth.

Handles.—Firmly bolted, braced and adjustable in height.

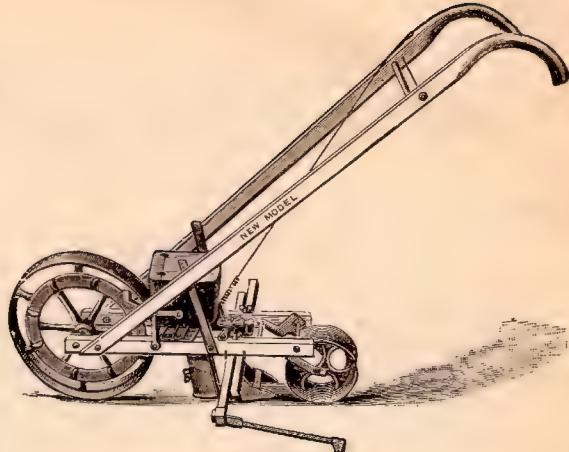


Fig. 28

The No. I "IRON AGE" Double and Single Wheel Hoe

Price, complete,

\$6.00

Price, No. 3, plain, (with side hoes only),

3.50

Packed Weight, 40 Pounds

Among the principal labor-saving tools in the hands of the market gardener must be considered *Wheel Hoes*. Nay, we may insist that it leads all others, for they are really indispensable. They have done away with the back-breaking and time-killing methods of the olden time, one man performing in a more thorough manner, and with greater ease to himself, the labor of several men. As with all other improved methods of labor it requires a little practice to enable one to realize the best results with a wheel hoe. A novice will usually push steadily ahead; not so—give the tool a *thrust* ahead, watching the wheel rather than the hoe, and taking a step at each thrust; this brings a result which the term *wheel hoe* implies; an ordinary hand hoe would accomplish little if simply dragged through the ground.

Having shown what is expected of a wheel hoe we desire to bring to the notice of the reader the "IRON AGE" *Wheel Hoe*. Without disparaging the many excellent tools of this character already in use, we recently became convinced from our own practical tests—we have been making wheel hoes for years—and the expressions coming from the workers in the field, that further improvement was possible and necessary. Higher wheels were called for; the old pattern frames were made of grey iron, and were consequently *too heavy*, to say nothing of their constant breakage. How well we have corrected these points, and made still other improvements we will endeavor to show. We have practically made the tool "bicycle construction." **Wheels** are of steel, very light and are 16 inches in height. **Frame** made of tubing, coupled to *malleable* castings; high arch, capable of working astride of 20-inch plants; three changes in height of wheels without entirely removing axle nuts; they not only can be placed inside the frame for working in narrow spaces, but an extra axle is sent out with each tool to be used, as shown in Fig. 76, making a perfect *Single Wheel Hoe*. We emphasize this point strongly, as a single wheel is certainly preferable in all garden work, with the single exception of working astride the row. The tool is equipped with a full complement of hoes, plows, etc., as shown in cut. Probably the greatest amount and variety of work is accomplished with the **Side Hoes**. For first hoeings of small plants these are placed, as shown in Figs. 75 and 81, cutting as close to the row as practicable, depending, of course, on condition of the soil and regularity of the plants. For later hoeings, when it is thought advisable to throw a little earth towards the row, the hoes are changed to opposite sides, as shown in Fig. 76, where the Double Wheel Hoe is represented with a single wheel, for work in between rows. When used in this shape between very narrow rows, it is possible to overlap the hoes, as one is slightly in advance of the other.

The set of four **Cultivator Teeth** are used principally for deep cultivation, and ours will be found to be peculiarly adapted to this service as they are formed of a single piece of steel, slender yet strong. One or more can be used as the work demands.

The pair of **Plows** can be used in various operations; in plowing away from or hillling crops; opening furrows and covering them after the manure and seed are placed therein.

The use of the **Rakes** is obvious; for leveling and fining the soil when preparing it for seed, and breaking the first crust, thereby destroying millions of young weeds. They can be used astride the row or placed closely together, while by the use of ratchet washers, they can be adjusted to several angles.

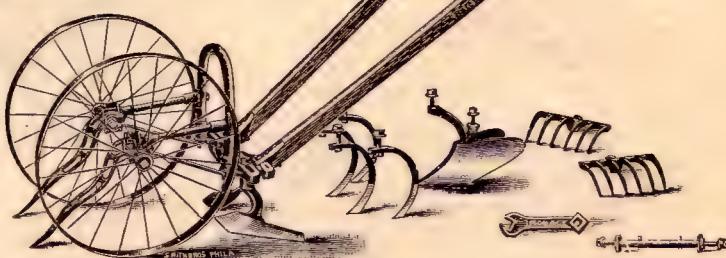


Fig. 75

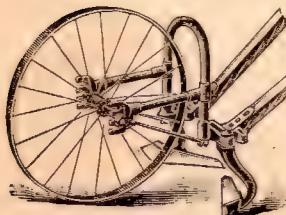


Fig. 76

Showing the Double Wheel Hoe
set up as a Single Wheel

The **Vine Lifters** are detachable, and adjustable in height without entirely removing the confining nut. They are valuable in lifting the leaves and vines to prevent their being covered by the soil thrown by plows or hoes.

We wish to strongly emphasize the really extraordinary ease with which the "IRON AGE" Wheel Hoe is operated, the lightness and construction of the tool being such that every ounce of effort goes direct to the work accomplished.

Attachments to "IRON AGE" Wheel Hoes

The Weeder Attachment. Very often it is found that the crust of soil is so firm the side hoes will not break it sufficiently to destroy the young weeds just germinating, and labor expended seems almost lost. Just here our new Weeder Attachment comes in fine play, as, attached to the rear slot of the frame and touching the ground a short distance behind the hoes, they complete the destruction of the weeds. The hoes could be given more pitch in order to break up this crust of soil more thoroughly, but this would also throw more dirt away from the plants, leaving them to stand upon a ridge exposed to the drying action of wind and sun. They are made, therefore, with very little pitch, and the action of the weeder attachment is to throw back to the plants what little soil is turned away, and moreover, leaves the ground perfectly level, with a mulch of fine soil on the surface that makes an admirable protection in

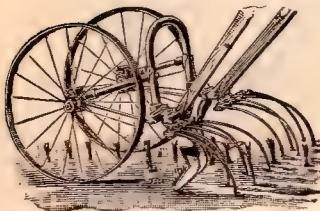


Fig. 81

Double Weeder Attachment. Price, per pair, \$1.00

time of drought. The heads of the weeders are of such shape that by changing to opposite sides they can be used between rows, while, if necessary, the width of cut can be reduced by removal of one or more teeth. Price of Double Wheel Weeder Attachment, per pair, \$1.00

Landside Plow.—Fig. 82 shows another attachment which seems to leave but little desired or possible, to make the No. 1 "IRON AGE" Double Wheel Hoe perfect. The cut plainly shows the Landside Plow following in line with the single wheel, which converts the tool into a *perfect*



Fig. 82

Onion Set Gatherer. Price, \$0.75

Single Tooth Attachment.—When using the "IRON AGE" Double Wheel Hoe as a Single Wheel Hoe, as a Cultivator, a wider space is left between the two inside teeth than there is between the other teeth. This is because as a Double Wheel Hoe the crops cultivated must pass between the two inside teeth, while the distance between the others should be less. Therefore, to thoroughly cultivate all the ground while working the tool as a Single Wheel Hoe it is necessary to add an extra tooth, as shown in Fig. 112. Price, \$0.50

Onion Set Gatherer.—Will fit all of our Double and Single Wheel Hoes, also Combined tools. It saves hours of hard labor and does its work in a most complete and thorough manner. Price, \$0.75

No. 4 "IRON AGE" Drill Seeder Attachment can be easily applied to any form of our "IRON AGE" Double Wheel Hoes, and when attached makes the tool a complete and thoroughly reliable Seed Drill for sowing seed in a continuous row. Price, as shown in Fig. 133 with all necessary parts, \$3.00



Fig. 133

No. 4 "Iron Age" Drill Seeder Attachment. Price, \$3.00

No. 6 "IRON AGE" Hill and Drill Seeder Attachment besides being applicable to any form of our "IRON AGE" Double Wheel Hoes, can also be applied to our No. 20 "IRON AGE" Single Wheel Hoe, shown on following page. This attachment is easily applied or detached, and will sow seed both in a continuous row or in hills at 4, 6, 8, 12 or 24 inches apart. Price, as shown in Fig. 134 with all necessary parts, \$4.00

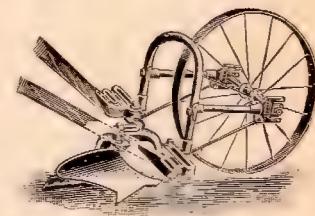


Fig. 134

The Landside Plow Attachment. Price, \$0.80

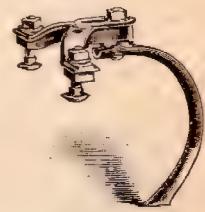


Fig. 112

Price, \$0.50

No. 20 "IRON AGE" Single Wheel Hoe

Price, complete, \$5.00
Price, No. 21 plain (hoes only), \$3.25
Packed Weight, 28 Pounds

In our No. 20 we offer our latest and most complete Single Wheel Hoe. The Wheel is 16 inches high and has a broad faced tire, being $1\frac{3}{4}$ inches wide. It is securely held in position by two rigid arms which are made of tubing and coupled to a malleable casting, to which the working tools and handles are attached. Being constructed on the principles mentioned above, it is necessarily very strong and yet light in weight.

One pair of side hoes, three cultivator teeth made of solid steel, one pair of rakes, and a landside plow are furnished with the tool when it is purchased complete.

The photo below shows one of the many purposes for which this tool may be used. With the different working tools a great variety of work may be accomplished; in fact, it completely fills every desire in handling the soil. There is a large class of amateur gardeners, who in buying a garden tool, question whether they will have enough use of a Seed Drill to warrant them in paying the additional price for a Combined Wheel Hoe and Seed Drill. To all such we especially recommend our No. 20 when a Single Wheel Hoe is desired, for at any future time a seed drill attachment may be applied which converts the tool into a Seed Drill, possessing every advantage of a tool made expressly for the purpose, and at simply the additional cost of a seed attachment, as shown below. Although a combination, not a single advantage is lost with the tool in either form, a Single Wheel Hoe or a Seed Drill.

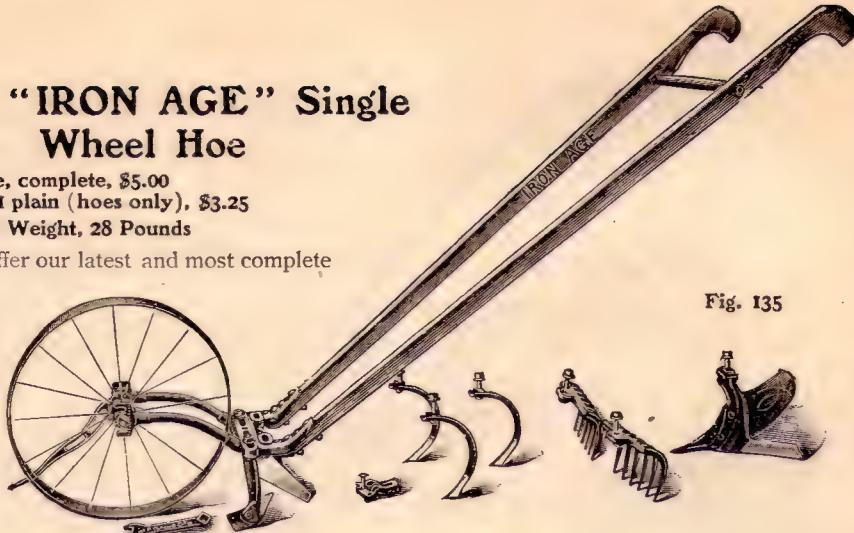


Fig. 135



Attachments

The No. 4 "IRON AGE" Drill Seeder Attachment may be easily and quickly applied to or detached from our No. 20. When applied it is one of the best seed drills on the market for sowing all the smaller garden seeds. Cut of this attachment is shown on previous page, Fig. 133. Price with all necessary parts, \$3.00

The No. 6 "IRON AGE" Hill and Drill Seeder Attachment may be applied to or detached from our No. 20 with the same ease and rapidity. When attached the tool is converted into a most complete seed drill for sowing seed in a continuous row or dropping in hills at 4, 6, 8, 12 or 24 inches apart. For cut of this attachment see previous page, Fig. 134. Price with all necessary parts, \$4.00

The Weeder Attachment shown on opposite page can also be applied to our Nos. 20 and 21. Price \$0.75

The No. 9 "IRON AGE" Single Wheel Hoe, Cultivator, Plow and Rake

Price, complete, \$4.50

Price, No. 10, plain (hoes only), \$2.75

Packed Weight, 28 Pounds



Fig. 78

we consider the single wheel hoe, with these points of merit, as being preferable. The work is done principally between the rows, although plants of small growth can be hoed on both sides at once by placing the wheel on the left side. With this single wheel tool, spaces of exceedingly narrow width can be worked, even using but one cultivator tooth. With the large plow attachment, deep furrows can be opened or closed; potatoes, celery and other crops hilled—in short all work usually accomplished by a special plow.

The picture herewith shown gives the reader an excellent idea of the application of this tool; the ease by which it is operated, and the thoroughness of its work are features which impress everybody.

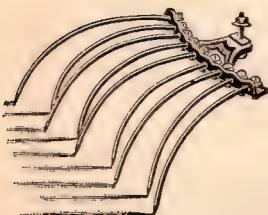


Fig. 84. Price, 75c.

Fig. 84. Weeder Attachment for Nos. 9, 10, 20 and 21 Single Wheel Hoes. By the application of this to the rear of the Single Wheel Hoe the same admirable work is accomplished, of fining the soil and destroying the countless small weeds, just pushing above the ground, as by the similar attachment to the Double Wheel Hoe. The Weeder can be reduced in width to pass through narrow rows by removal of a portion of the teeth.

The No. II "IRON AGE" Wheel Plow

Following out the idea of bicycle construction, as shown in the preceding tools, we offer also a wheel plow constructed in same manner, and we think we can not be accused of extravagant language in claiming it to be a little "beauty." Its graceful shape and exceeding lightness accord well with its ease of operation and perfection of work. Adjustable in depth.

It will plow from three to four inches deep and throw a furrow four to six inches wide.

Poultrymen will find this tool to be the easiest, quickest and most efficient implement for turning under the accumulated filth and droppings in their poultry yards.

Price, \$2.00

Packed Weight, 15 Lbs.

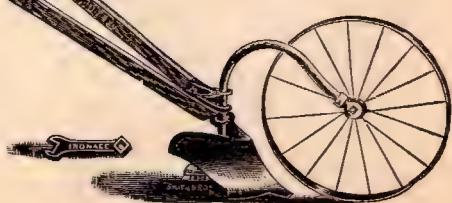
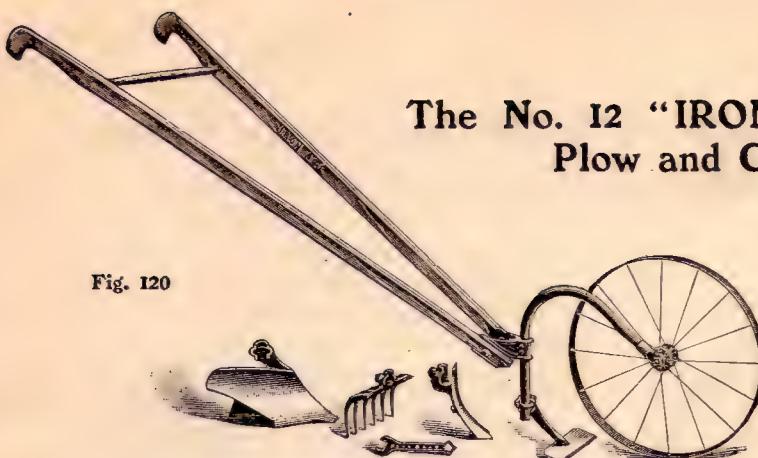


Fig. 79



The No. 12 "IRON AGE" Wheel Plow and Cultivator

Fig. 120

Price, \$3.00

Packed Weight, 20 Pounds

With all the different styles of Garden cultivators we have been manufacturing, there still remained a demand for a tool such as shown in Fig. 120; something light, strong, low in price and still possessing the necessary tools to make it accomplish a great variety of work. Yes, in fact, all work needed to be done in a small kitchen garden: plowing, furrowing, covering, hoeing, raking and cultivating.

The wheel is of steel 16 inches high; the frame of pipe coupled to malleable castings; the tools of best steel and malleable iron.

The average weight of this implement fitted with one working tool is but eight pounds, and can therefore be carried about the garden and used as readily as a common hoe.

Only those who have actually used one of these tools in his garden can appreciate its value or dream of its usefulness. Every day from early Spring to late in the Fall brings some special work for this tool. The first thing after the frost is out of the ground, it must be stirred and prepared for planting, and for this purpose the tool is fitted with the landside plow, which thoroughly breaks up the ground, after which the rake is applied and the ground pulverized. Furrows may be made and covered, in which seed, manure or fertilizer may be sown, while during the growth of the plants, the hoe and other tools will be found to do excellent service.

The simple means of detaching or applying the tools practically makes the implement ever ready for the purpose needed, therefore, this tool is emphatically a friend of the laborer and mechanic who can afford only to invest a small amount of money in a garden tool, and whose few moments in the garden must be devoted to "straight-ahead" work.

This Wheel Plow and Cultivator is not only useful in cultivating vegetables but also flowers, the photograph herewith showing the application of the tool in a flower garden. Amateur flower gardeners fail in that they do not regard the cultivation of their flowers of the same importance as the cultivation of their vegetables.

Those who raise poultry, even in very limited numbers, will find this tool of great value for stirring the soil in their poultry yards, especially when fitted with the plow. Even when there are but a few fowls, the top soil of the ground is sure, at times, to become sour and need turning under.



The "GEM OF THE GARDEN"

Single Wheel Hoe

PRICE

Plain, with 5 teeth only,

\$3.00

Complete, as shown, \$4.25

Packed Weight, 25 Lbs.

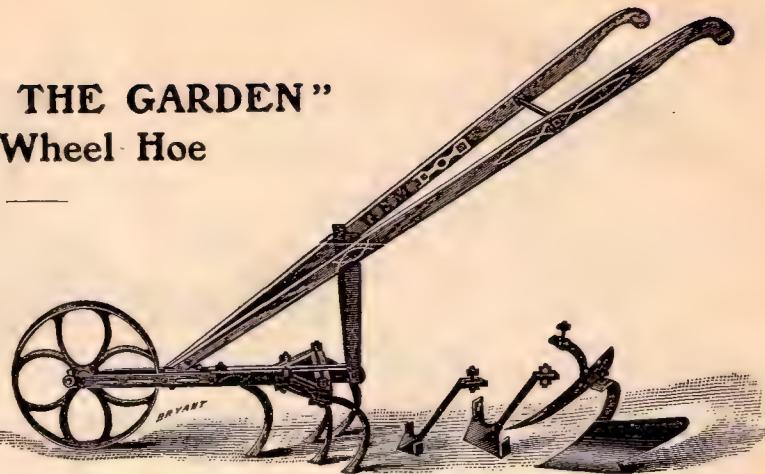


Fig. 30

No greater proof can be given of the popularity of a tool, or of its intrinsic worth, than the one simple fact of a *continued* demand for it. During the past few years, we have placed about fifteen thousand of the "GEM" Wheel Hoes in the hands of gardeners, and we are not aware of a single instance in which it has failed to give entire satisfaction to the user.

It is not a toy; neither is it a tool made of light gray castings, calling for constant repair, the "GEM" being largely made up of *steel* and *malleable iron*. The set of slender stirring teeth, each stamped from one piece of steel, can not be excelled for thorough work, especially in hard soil.

The "GEM" is nicely finished, and when set up makes a handsome, quick selling implement.

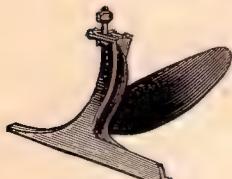


Fig. 32
"Gem" Landalde Plow.
Price, \$0.80

The "GEM" Double Wheel Hoe

Complete as Shown

Price, \$5.00

Packed Wt., 30 Lbs.



Fig. 31

For first and second working of crops the tool is used astride the row, while for subsequent hoeings the wheels can be closed together by means of the telescopic axles, and used between the rows as a single wheel tool. With the double wheel machine we usually send out the side hoes (as shown in cut), and with the single wheel, the scuffle hoe (see cut of single wheel machine), although the side hoes may be used effectively with the single wheel. Also an Onion Set Gatherer, Fig. 33, shown on page 11, is used by passing under the row; also makes a very good scuffle hoe. Can be used with either style "GEM" though more particularly adapted for the Double Wheel.

The No. 6 "IRON AGE" Horse Hoe and Cultivator

Price, as in Cut,
\$8.00

Without Furrow-
Closing Attach-
ment, \$6.75

Packed Weight, 95
Pounds.

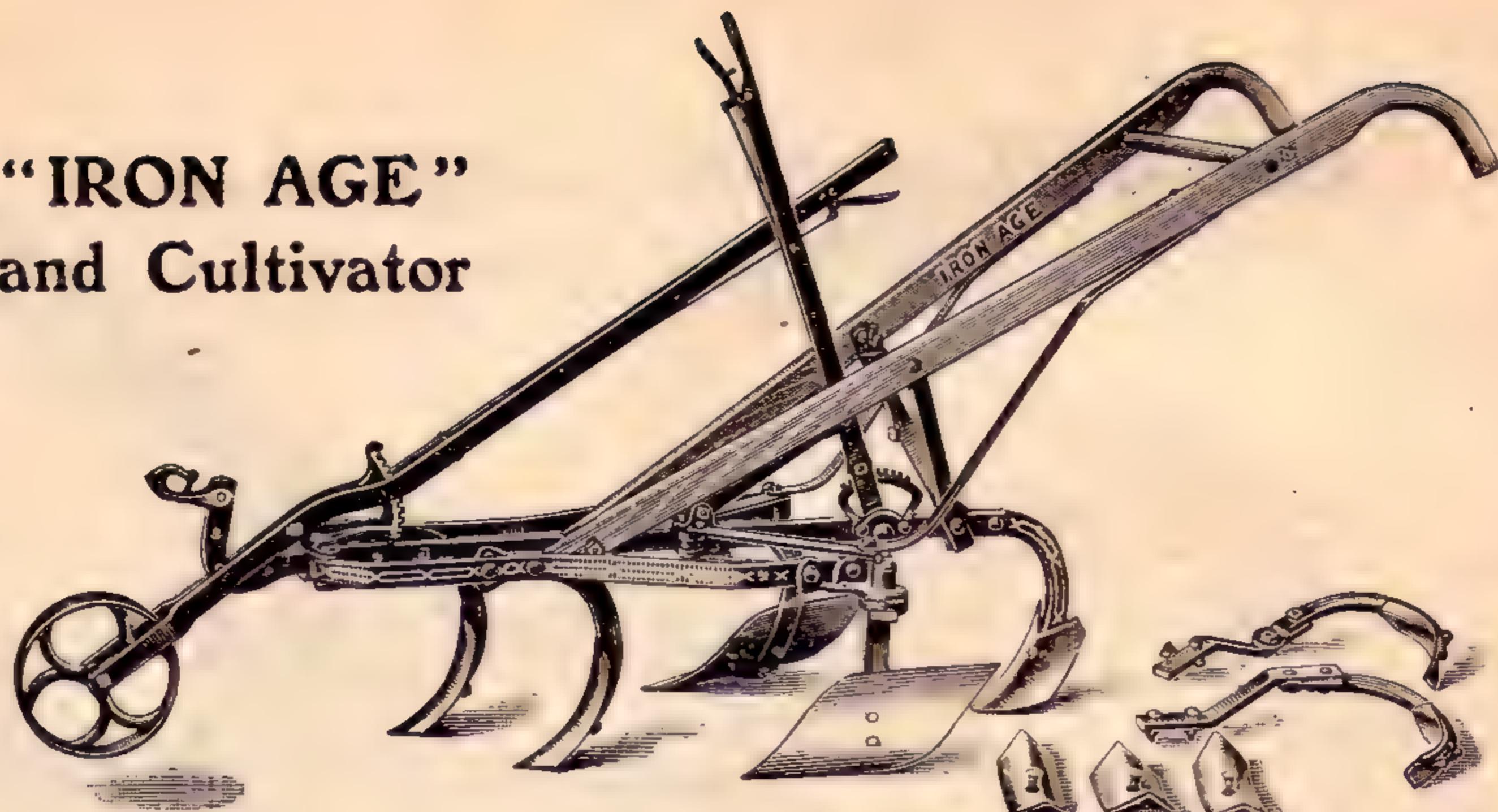


Fig. 72

Our No. 6 "IRON AGE" Horse Hoe and Cultivator is truly a 20th Century tool. It is a popular implement wherever the sun shines and crops grow. Its great adjustability adapts it for numberless uses and conditions. The following description will convince one why it "heads the procession."

The Frame of this tool is high and long, therefore it runs steady and with excellent clearance of trash. The Horse Hoe standards carry the cultivator teeth, as shown in Fig. 71, instead of using an additional pair of cultivator standards as we do in the case of our No. 1 "IRON AGE" Horse Hoe, Fig. 64.

The Horse Hoe Standards are of heavy *solid* steel and are attached to the bars by means of malleable iron ratchet castings, thus making a very firm connection and one capable of withstanding severe shocks without injury.

The Ratchet Castings are constructed so as to give easy and numerous adjustments to the side hoes, not only *sidewise*, but in angle of pitch. This adjustment also permits of the side hoes being entirely reversed for hoeing, or, for covering purposes, with point forward, as shown in Fig. 104, they can be quickly changed from side to side. Although our No. 6 Horse Hoe, when used as a cultivator, expands to a width of 30 inches, and

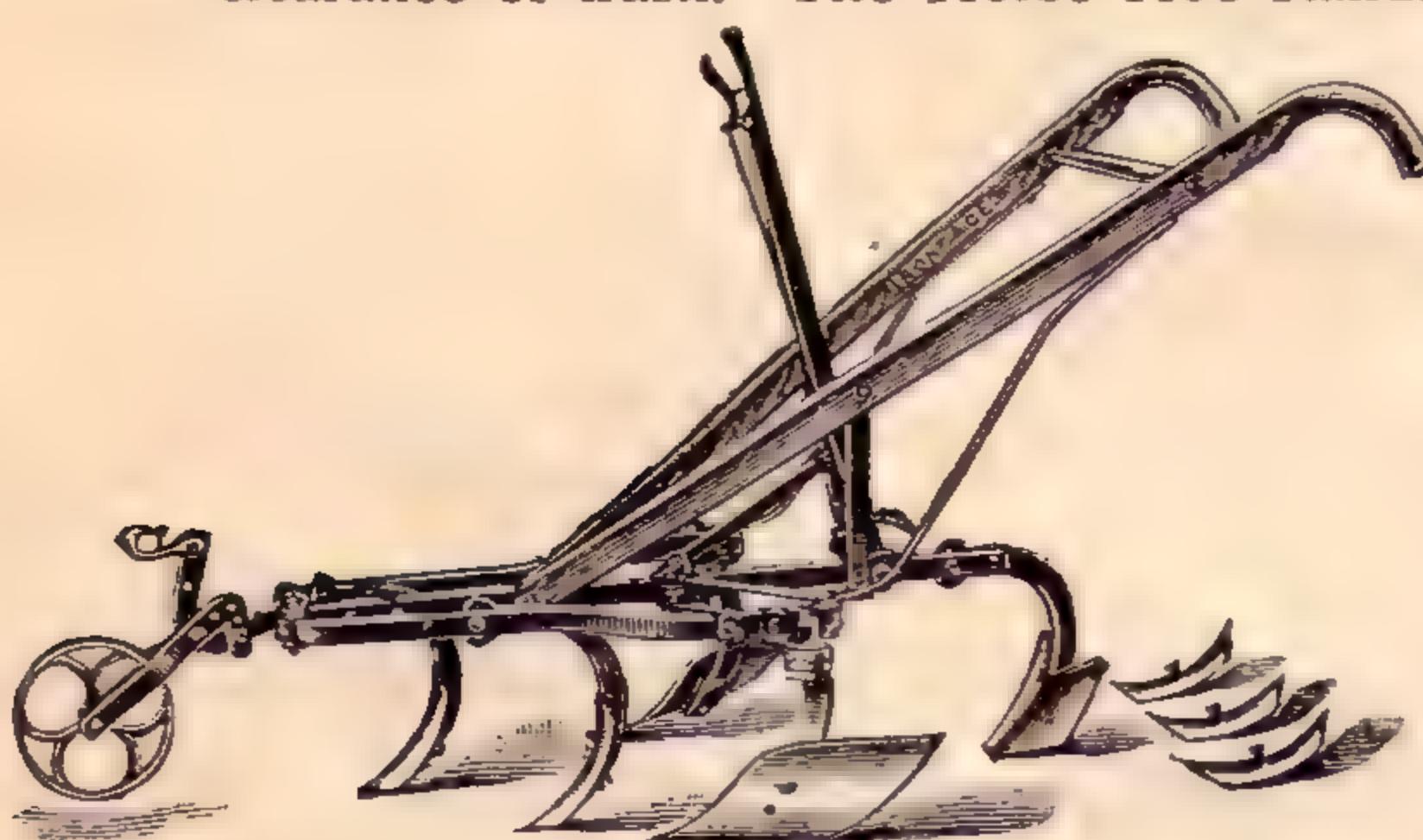


Fig. 100

The No. 6 "Iron Age" Horse Hoe and Cultivator shown with Plain Wheel. Price, \$6.25, as in cut.

closes sufficiently for ordinary purposes, the hoe steels, if necessary, can be brought into immediate contact with each other by placing the ratchet castings in a reversed position, on the *inside* of the side bars. In this shape the tool is capable of doing excellent work, opening furrows for manure and other purposes. This arrangement is shown by Fig. 80.

Our Lever Expander has stood the test for several years with but little change, and we consider it, with its pair of double expander bars, the best of its kind for strength, simplicity and rigidity. It is made entirely of steel and malleable castings, of good length and placed in a convenient position for the operator. By the use of this Lever Expander the tool, as a cultivator, can be instantly changed while in motion from the extreme width of 30 inches, to 14 inches as its narrowest. Or, the castings of the Hoe Standards of No. 6 can be placed on the *inside* of the frame and it can then be used as a cultivator as narrow as 11 inches.

The Lever Wheel is also extremely simple, the lever handle being of steel, the castings malleable and is attached to the forward part of the Horse Hoe, the two bolts of the hinge-plates passing through the malleable ratchet piece. This lever wheel gives the facility of adjusting the depth of

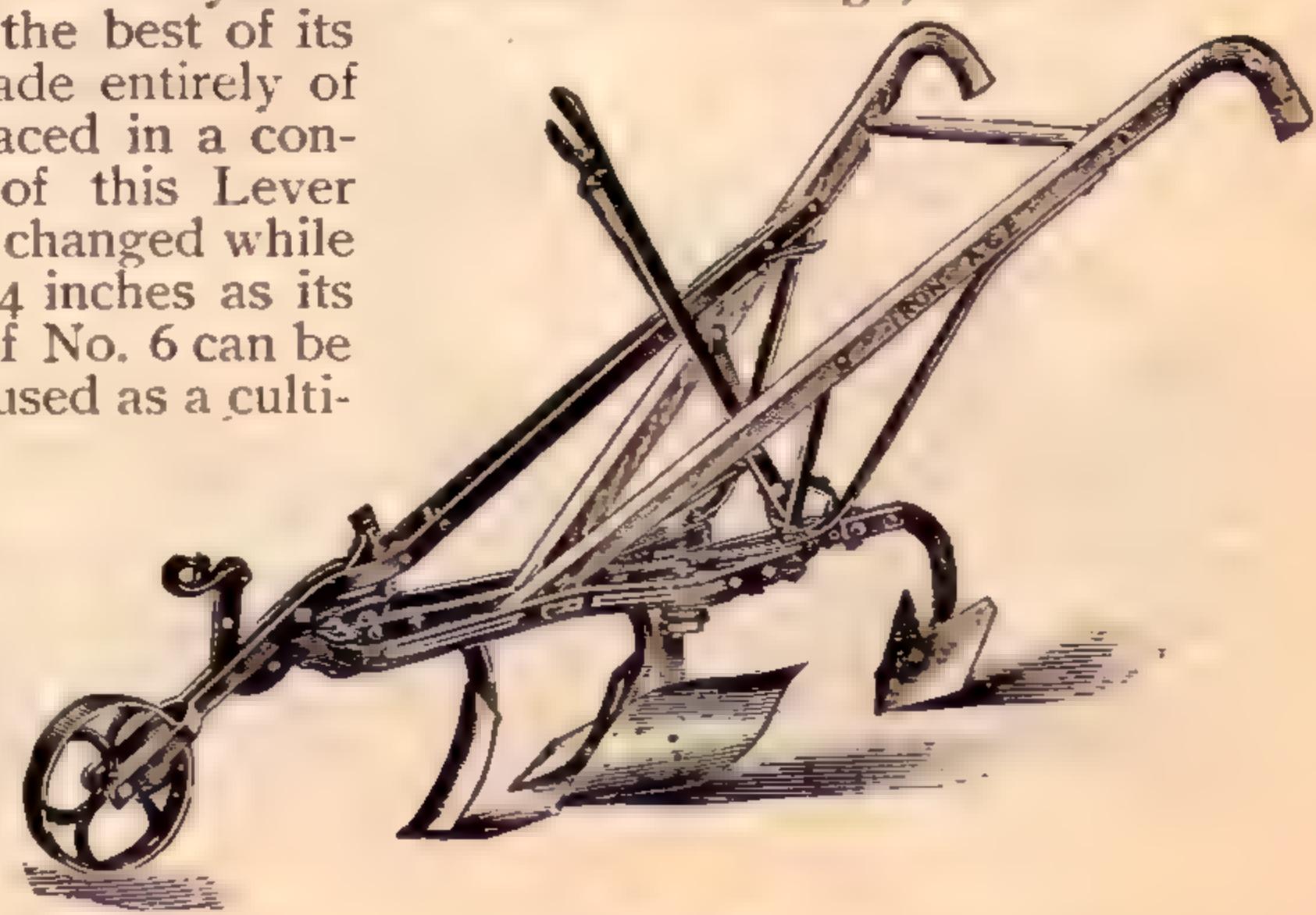


Fig. 80
The "Iron Age" No. 6 shown as a Furrower.

working while the tool is in progress, and is, therefore, to be commended as a good time-saver in a busy season. We furnish as ordered any of our Horse Hoes equipped with the *plain* wheel attachment, as shown in Fig. 102.

The furrow-closing or 7-tooth attachment shown in Fig. 71, is a particular feature of our "IRON AGE" No. 6 and No. 7 Horse Hoes and Cultivators. The large number of these attachments sold since their introduction have been very gratifying, and all who have used them claim they are the greatest improvement made on cultivators for years. Very often has been heard this criticism on a five-tooth cultivator, and a well-founded one it is; that the rear tooth on each side bar, passing closely to the crop, leaves an open furrow which should by all means be closed. This is especially noticeable when the cultivator is opened wide—too wide to enable the centre tooth or sweep to close this furrow. It is the avoidance of this that makes the *better* work done by a two-horse cultivator working astride the row.

In a very simple manner, however, we accomplish this with our No. 6 or No. 7 Cultivator; an extra standard, with a narrow tooth being bolted in rear of and on the *inside* of the second tooth. This not only fills in the open furrow nicely, but more thoroughly pulverizes the soil.

It is, in fact, a seven-tooth attachment, and converts the tool into a most perfect seven-tooth cultivator.

Figure 101 represents the "IRON AGE" equipped with No. 18 Sweeps in such a manner that a wide cut is made and at an exceedingly shallow depth. This arrangement is particularly intended for cases where flat cultivation is desired. It is remarkable what rapid growth this practice has recently made; farmers who at one time used the plow as a means of cultivating are to-day using tools which will keep the surface very near level. By experience we know level cultivation to be the

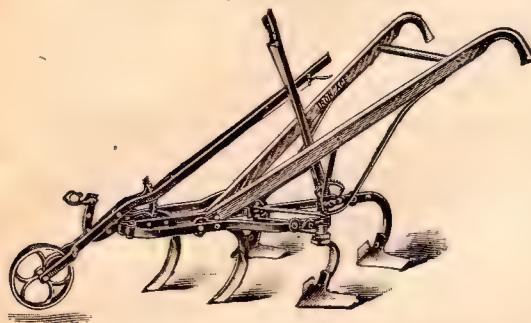


Fig. 101

The No. 6 "Iron Age" Horse Hoe and Cultivator equipped for Level Cultivation

correct plan, and it is probable others have learned from the same source. The cultivator fitted with sweeps is also largely used as a thistle exterminator. They can, of course, be set to run deeper, and be used in various combinations.

We make our No. 18 sweeps in four sizes, as shown on page 27: 8, 10, 12 and 15 inches in width.

Prices, respectively, 28, 32, 38 and 45 cents each.

Figure 102 shows our No. 6 "IRON AGE" Horse Hoe in a simpler form, being equipped with plain expander bars, held in place by our new wheel clamp, or our well-known steel stirrup clamp.

It is needless to say that in this shape, though not so convenient in making changes, it is by far the most *rigid* and consequently the most durable form of the Horse Hoe. For rough knocks in the hands of careless or inexperienced laborers, we recommend the "IRON AGE" as shown in Fig. 102.

The tool in each form is simple, strong and effective, besides having a pleasing design; the finish is the very best, and is something really unusual, the frame, standards, etc., being covered with two coats of paint and one of varnish, while the handles have a heavy coat of wood filler and two of varnish.

All our readers desiring the best will not go amiss in purchasing the No. 6.



Fig. 71

No. 6 "Iron Age" Horse Hoe as a Cultivator, shown with "Furrow-Closing" Attachment

Figure 102 shows our No. 6 "IRON AGE" Horse Hoe in a simpler form, being equipped with plain expander bars, held in place by our new wheel clamp, or our well-known steel stirrup clamp.

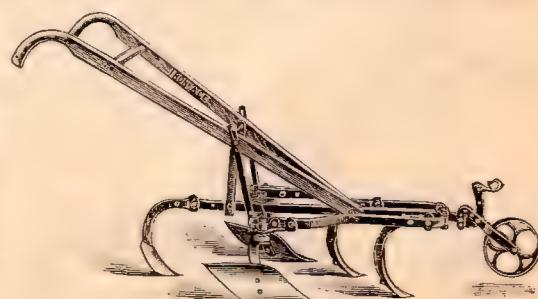


Fig. 102

The No. 6 "Iron Age" Horse Hoe and Cultivator without Lever Expander, Price, \$5.45

The No. 7 "IRON AGE" Horse Hoe and Cultivator

Price, as in Cut, \$8.50

Without Furrow-Closing Attachment, \$7.25

Packed Weight, 95 Lbs.

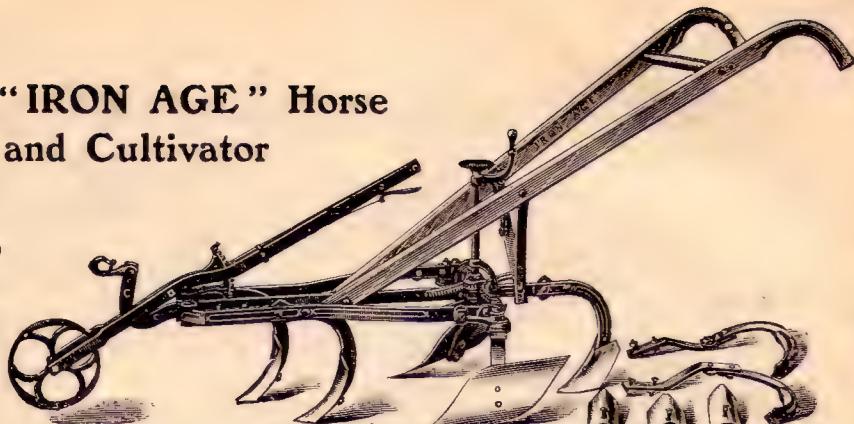


Fig. 90

Our No. 7 "IRON AGE" Horse Hoe and Cultivator Combined has gained many warm friends among the farmers and gardeners who constantly use tools of this class, and whose requirements of such tools are necessarily most exacting. Think over what we say below. We are confident that you will agree with us in appreciating the excellent advantages of this tool.

The frame is practically the same as our "IRON AGE" No. 6, viz.: high and long, therefore runs steady and does not choke in trashy ground.

The New Expander.—Ever since the first introduction of the lever expander for Cultivators and Horse Hoes, objections have come from the users of the tools that while they effected a saving in time, yet their use seriously interfered with the rigidity of the tool. So strong have been these complaints that manufacturers of this class of goods have worked and planned to their wits' end to devise a lever expander, which would hold the parts rigid at every point one wished to set the tool. So serious has been this objection, thousands of farmers have clung to the old style clamp expander rather than have the lever expander with its lack of rigidity.

In our No. 7 "IRON AGE" Horse Hoe we offer to the public a device, which without question is the best expander yet introduced. The tool is at all times rigid, this being attained almost as easily and quickly as is the case in an ordinary lever expander. It is in principle a combination of the lever expander and the old style clamp expander, maintaining the advantages and overcoming the disadvantages of both. By simply releasing the wheel clamp and moving the crank to the right or left the Cultivator is widened or narrowed. When the Cultivator is set at the width desired tighten with the wheel clamp, and the tool is made rigid.

By this device, *one side of the Cultivator may be set nearer* the middle bar than the other, yet being adjusted in the same way. The absence of this adjustment on the lever expander has caused many "truckers" to still hold to the old style clamp.

As a Cultivator, our No. 7 Horse Hoe will widen so as to cultivate a surface of 30 inches and narrow to cultivate only 10½ inches.

As a Horse Hoe it can be so contracted that the blades will come into immediate contact with each other, in which position it can be used for opening furrows, etc.

We would call attention to the segmental design of the expanding racks, which keeps them entirely within the frame, even when fully closed; thus avoiding all injury to crops.

Our New Wheel Irons.—To adjust our new wheel irons requires but one-fourth of the time of the best fitting ordinary wheel irons. No bolts or nuts are lost, as to set the wheel at any desired depth it is merely necessary to slightly loosen the nuts, and again tighten them. The wheel is firmly held to its place by a pair of ratchet castings.

The fine adjustment in depth of the wheel which can be made with these wheel irons is an important feature; with the old style wheel adjuster the depth of running of the wheel was always set at one of four places; with the new the wheel can be set at almost any point.

The Horse Hoes are adjusted in angle by simply loosening one nut and tightening same, after setting the blades at the desired angle. On our No. 7 "IRON AGE" Horse Hoe the pitch of the blades can also be finely adjusted, which is done by the use of a small ratchet casting. It will thus be seen that the

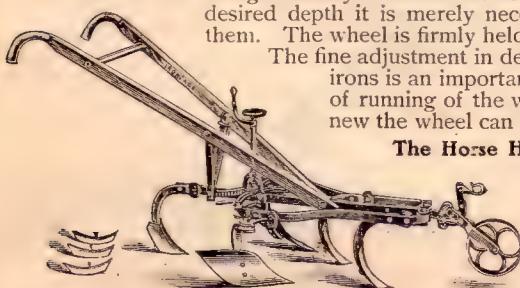


Fig. 91

The No. 7 "Iron Age" Horse Hoe and Cultivator, shown with Plain wheel, \$7.00

adjustment of the Horse Hoes in either direction can be quickly accomplished by simply loosening and tightening two nuts, a feature which will be appreciated by the user in the field. As the point of the blade becomes worn it may be set down lower, and thereby greater wear can be obtained from it. These blades are made of the best steel, tempered in oil and highly polished.

The Lever Wheel is the same as used on our No. 6 and No. 1 "IRON AGE" Horse Hoes, with the exception of being somewhat shorter. It has but one pivot and is therefore not apt to become shaky.

The Furrow-Closing or Seven-Tooth Attachment.—Please bear in mind that this attachment which has become so valuable, and which is a special feature of the "IRON AGE," is also applicable to our famous No. 7 "IRON AGE" Horse Hoe.

The Handles are made of the best oak; while ash no doubt would give a brighter appearance, yet for durability oak is much preferable.

No. 1 "IRON AGE" Horse Hoes and Cultivators

The No. 1 "Iron Age" Plain Cultivator, with Clamp Expander

Price, as in Cut, \$3.50
With Plain Wheel, add
60 cents
With Lever Expander
add 80 cents
With Lever Wheel, add
\$1.10
With Horse Hoe and
Sweep, add \$1.35

Packed Weight, plain, 50 lbs.



Fig. 10

In this cut we represent our "IRON AGE" in its simplest form—a plain cultivator. In this shape we sell it largely in those sections of the country where labor is inefficient and a cheaper and simpler tool is desirable. It is an honest, strong and faithful servant.

The No. 1 "IRON AGE" Cultivator with Seven Teeth

It is obvious that very many times in the cultivation of crops a Cultivator having seven instead of five teeth becomes very desirable, as shown in Fig. 57. Of this arrangement we can not speak too highly. Equipped with narrow teeth, No. 0 ($1\frac{1}{4}$ inches), or No. 1 (2 inches), it does most excellent work in the first workings or in flat cultivation of crops, running very deep, and still throwing furrows so small as to endanger young plants but little. On this account tobacco growers are especially well pleased with the "IRON AGE" in this shape. It most thoroughly pulverizes all conditions of soil.

As will be plainly seen from the annexed cut, the change is made simply by the use of additional pair of standards and teeth. Price, as in Fig. 57, \$5.65



Fig. 57

The No. 1 "IRON AGE" Horse Hoe and Cultivator Complete

On previous pages we have shown our latest pattern Horse Hoe, the No. 6 and No. 7, but in the cut below, Fig. 64, we represent the tool that has been carrying for years the fame of the "IRON AGE" far and wide. There is scarcely conceivable a portion of the tillable earth where it has not been in use, or a cultivated product of the ground which it has not helped to produce. This tool is somewhat lighter than No. 6 and No. 7, and for this reason is still preferred by some. The frame is not so high, and consequently it is necessary to make use of a separate pair of cultivator standards when wishing to convert it into a plain cultivator. All the "IRON AGE" attachments, with the exception of the Furrow-Closing Attachment, are applicable to this admirable and well-known tool. Price, Fig. 64, \$6.75

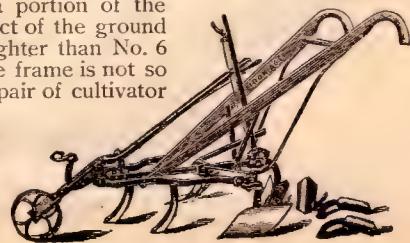


Fig. 64

"IRON AGE" Attachments

A characteristic, and a valuable one it is, that a large portion of the "IRON AGE" tools are interchangeable. All of the following attachments will fit our Nos. 1, 6 or 7 Cultivators and Horse Hoes—not only our present patterns, but such styles as we have made for years past. For instance, a wheel furnished on a Cultivator ten years ago will fit on our present Cultivators. This interchangeable feature is one which we have kept in mind while designing improvements, and furthermore, will continue to be our policy in the future.

In these days of rapid and continued development of new things, the addition of these devices to an implement are expensive when one must buy a complete tool in order to gain the advantages of such improvements.

The Vine Lifter Attachment

The Vine Lifter Attachment shown in Fig. 73, can be easily and quickly applied. This tool is used principally in working sweet potatoes, but is also very useful among all vine and bush crops. **Price, attachment only, \$1.40**



Fig. 73

The Hilling Attachment

The Hilling Attachment, shown in Fig. 103, is applied by simply removing four standards and placing the standard of the hillier on the middle bar and attaching the short standards of the blades to the side bars. This attachment is used in cases where higher ridging is desired than what can be accomplished with the regular Horse Hoe blades. The demand for this tool comes principally from the New England States, where high ridging of potatoes, etc., is practiced. **Price, attachment only, \$2.00**

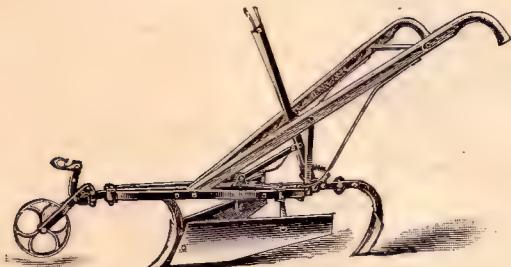


Fig. 103

The Leveler

The Leveler is applied as shown in Fig. 104, and is used in connection with the "IRON AGE" Horse Hoe in covering corn, potatoes, peas, etc., and making up rows for root crops, etc. Thousands of "IRON AGE" Horse Hoes are used in this style, particularly among truckers and gardeners. The covering is accomplished by simply reversing the Horse Hoe standards. This Leveler attachment is one that in every respect excels the roller, whose work it is designed to do. The latter is clumsy and heavy, and at times in light soils, will load up and require lifting over, while this is impossible with the Leveler, and, besides, is easier to handle, lighter of draft and much less in price. **Price, attachment only, \$0.85**

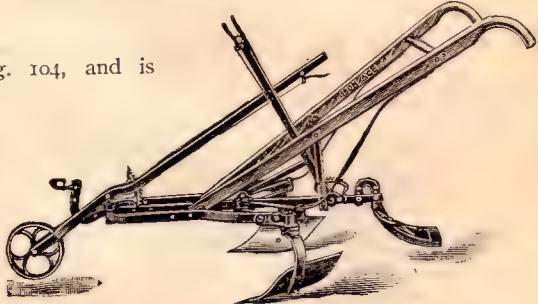


Fig. 104

Runner Attachment

Figure 105.—This cut represents the "IRON AGE" with steel runners in place of wheel, while being used as Coverer. This arrangement is spoken of highly by progressive farmers as being steadier in operation, and avoids all danger of displacing seed by wheel, which danger is still lessened by using two horses, as is frequently done.

Price, attachment only, \$0.85

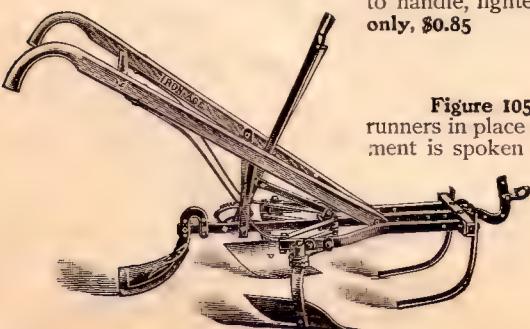


Fig. 105

No. 1 "IRON AGE" Combined Harrow and Cultivator

Price, as in Cut, \$5.40

Packed Weight, 60 Pounds

Fig. 106 represents our "IRON AGE" Combined Harrow and Cultivator, a tool that has, since its introduction, seemed to go "right to the spot" among farmers over the whole land. It is extensively used in cultivating Sugar Beets. As plainly shown in cut, the teeth are diamond shape, with a small cultivator tooth forged on one end—steel of course. For very close work, every other tooth can be quickly removed. In common with all good things, this tool has numerous inferior imitations, but for solid quality, design



Fig. 106

or finish, is not approached by them. We furnish this tool, when ordered, in its plain form or with the addition of the lever expander plain or lever wheel. Cultivating width when equipped with lever expander 34 inches; with plain expander in place of lever expander 38 inches. Price, plain Harrow, \$4.00. Add for Plain Wheel, \$0.60. Lever Wheel, \$1.10. Lever Expander, \$0.80.

No. 2 "IRON AGE" Diamond Tooth Harrow.—We also offer a modification of the above tool provided with 13 double ended teeth (see Fig. 87). This is in response to a call from those who do not care for the several adjustments, but who wish the economy of the double end. Price, with Lever and Wheel, as in cut, \$4.90, plain, \$3.50.

Sweep Attachment.—We also have, as an attachment, fitting both our Nos. 1 and 2 Harrows, a wide, flat sweep on a high-throated standard, for use on rear end of middle bar. Sure death to weeds and grass. Price, \$0.90.

The No. 5 "IRON AGE" Orchard Cultivator.

Price, as in Cut, \$7.50. Furnished with either style Wheel, but with Clamp Expander only.
Packed Weight, 80 Pounds

Orchardists will do well to examine this modification of the "IRON AGE," it being something particularly well adapted to their needs. Its wide spread (nearly four feet) and numerous teeth is not made up by additions to the ordinary five tooth cultivator, but is complete in itself, having a construction that gives great rigidity, good clearance to the teeth, and yet handled by the operator with nearly the same ease as that of the smaller tool.

It affords, at a moderate price, just the tool for peach and orange groves, where it is already extensively used.

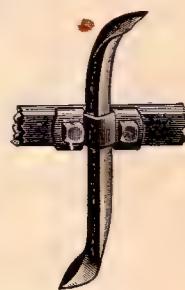


Fig. 87



Fig. 86

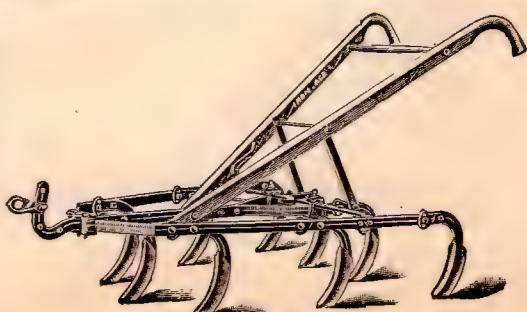


Fig. 70

No. 70 "IRON AGE" Combined Pivot and Fixed Wheel Riding Cultivator

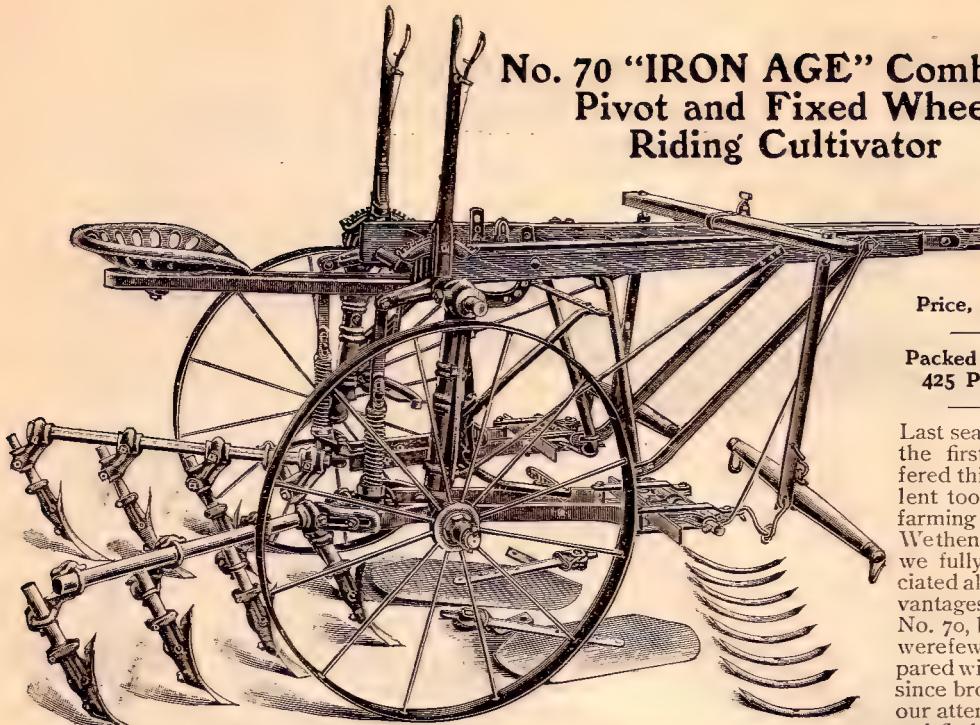


Fig. 136

Price, \$34.00

Packed Weight
425 Pounds

Last season was the first we offered this excellent tool to the farming public. We then thought we fully appreciated all the advantages of our No. 70, but they were few as compared with those since brought to our attention by satisfied farmers the country over.

The combination feature with its many other advantages adapts the tool for all kinds of farmers in cultivating all kinds of crops, on hillside or plain,—in fact, to practically universal use.

Although a combined tool, when used in either form, a Pivot or Fixed Wheel Cultivator, it is a thorough success, containing advantages over many tools made expressly as a Fixed or Pivot Wheel tool.

Advantages of a Combined Pivot and Fixed Wheel Riding Cultivator.—

Certain work can be more satisfactorily accomplished by a cultivator with Fixed Wheels, while at other times it seems absolutely necessary to make use of one with Pivot Wheels; therefore, by having either tool at your immediate command, better results in cultivation may be obtained.

Statistics show us that a large number of farmers do not own the farms upon which they live, and while to-day their preference may be for a Fixed Wheel tool, because of their farms being level or slightly rolling, another year they may be found upon another farm, too hilly to allow the successful operation of a Fixed Wheel Cultivator. In this case it might be necessary for them to sell their Fixed Wheel tool and purchase a Pivot Wheel implement; whereas the change from one to the other could have readily been effected if the tool had been a combined implement.

To work a Pivot Wheel Cultivator successfully requires a little experience; considerable in fact for some "green hands." Oftentimes an inexperienced operator must be pressed into service, or the crop to be cultivated left to suffer. That inexperienced person can more easily operate a Riding Cultivator with Fixed Wheels, than one with Wheels Pivoted, and perhaps if the tool was one with pivoted wheels only, in his attempt to use the Cultivator, he would do more harm than good. Lack of space prevents the mention of many other advantages of this combination.

As a Pivoted Wheel Cultivator.—There are two forms in which our combined Riding Cultivator can be operated as a Pivot Wheel; the wheels can be guided by the feet, while the gangs remain rigid, or if the rows to be cultivated are unusually crooked, in a moment's time he can have the gangs moving in unison with the wheels. By the latter method it is marvelous how quickly the gangs with their teeth can be thrown from side to side. The slightest change in direction of the running of the wheels also affects the movement of the gangs.

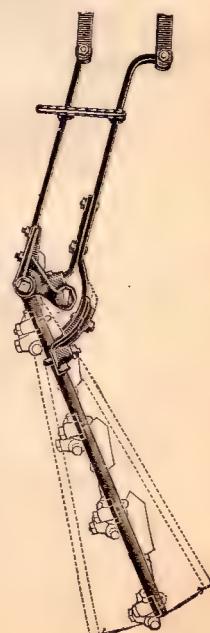


Fig. 139

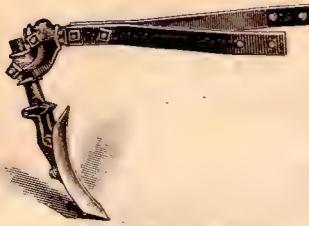


Fig. 140, Price, \$1.00

As a Fixed Wheel Cultivator.—In this style the wheels are rigid, while the gangs are movable, the guiding of the gangs being accomplished by the pressure of the foot on one or the other of the foot rests, the same method of moving the gangs as when it is operated as a Pivot Wheel. This is an important feature, as it simplifies the cultivator, and the operator uses the same forward motion of the foot as when using this tool as a Pivot Wheel,—no side push.

The Wheels are made of steel, 32 inches high with a broad faced tire, $2\frac{1}{2}$ inches wide. They are adjustable in width at any point between 42 inches as the widest and 32 inches as the narrowest. This adjustment allows for the entire cultivation

of rows 54 inches apart, and as close as 28 inches or even narrower.

Pivoted Gang Bars.—The gang bars are hinged or pivoted as shown in Fig. 139, and the cultivating width can thus be quickly changed by the simple loosening and tightening of two bolts. They are of round bars of steel, rolled with a groove that engages a rib on the tooth holder, while the eye-bolt firmly clamps the tooth-holder to the bar. This combination also gives the facility of changing the position of the teeth, and increasing or reducing the number.

It is customary when cultivating narrow rows to reduce the number of teeth, but with this new adjustable gang bar it is not necessary; not only the full number can be used, but by the use of the narrow points sent out with each tool, ideal cultivation can be accomplished—the soil being thoroughly worked and yet remaining level.

The gangs are connected by parallel links, giving an easy swinging motion, and at the same time keeping them square to the front, instead of constantly changing the face of the teeth as occurs by the use of the ordinary single coupling.

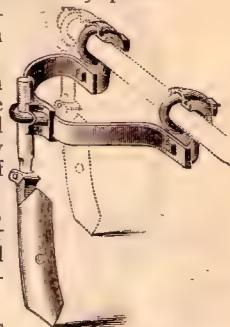


Fig. 147, Price, \$3.00

Double Row Extension Attachment (Fig. 147).—We offer as an attachment a double row extension for use in cultivating two rows, at a single passage, of beans, potatoes and other crops planted equally as close. It does excellent work,—no open furrows next the crop as the outside tooth is in advance of the rear one. For fallow work and in cultivating especially wide rows, this attachment is also very valuable. **Price, \$3.00 per pair.**

A Spring Tooth Attachment may be quickly and easily applied as shown in Fig. 137. **Price per set of 8 (including points) \$6.00.**

The Plows (Fig. 117), Fallow tooth attachment (Fig. 140), Disc attachment (similar to Fig. 118) are each applicable to this cultivator. When ordering disc attachment for No. 70, order as No. 2. Equipped with Spring Hoes, Fig. 110, Page 25, add to list \$4.50.



**Fig. 141
Price, \$1.00**

No. 75 Spring Tooth "IRON AGE" Combined Pivot and Fixed Wheel Riding Cultivator

This cultivator is identical with our No. 70 except in being equipped with spring teeth.

For some soils, and in certain conditions a cultivator fitted with spring teeth will do better and more efficient work than one with rigid teeth. Grass and weeds have but small chance of life when exposed to the sun by the shake and tremble of the spring standards.

Fallow tooth attachment (Fig. 141), Disc attachment similar to Fig. 118, Page 25, (order as No. 3). Plows with special standards and standard holders, \$2.00 per pair, may be applied to this tool. Break-pin standards (per set of 8) including points and standard holders see Fig. 136, \$7.00. Spring Hoes also including points and standard holders, \$12.00 per set of 8.

**Price, \$33.00
Packed Weight, 415
Pounds**

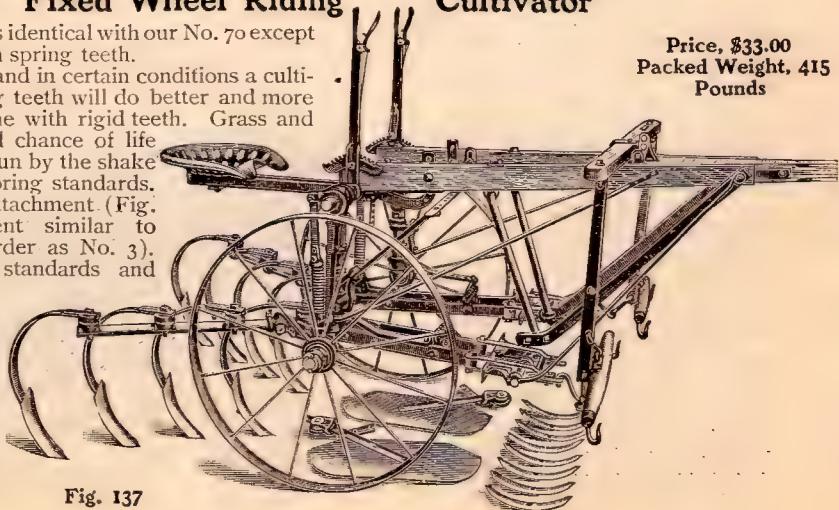


Fig. 137

The No. 60 "IRON AGE" Pivot Wheel Cultivator

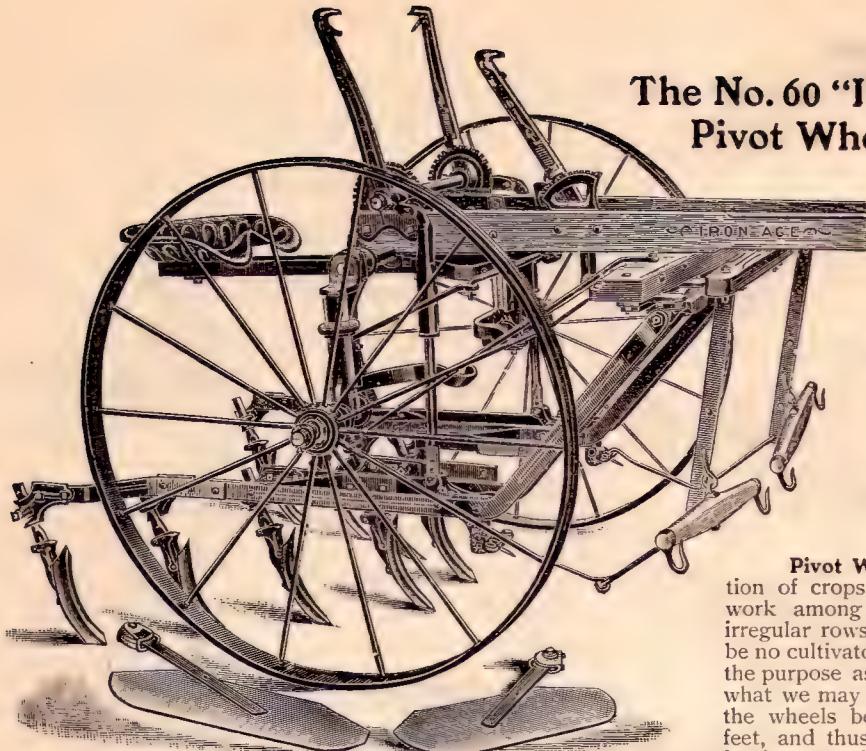


Fig. 121

devising our Pivot Wheel Cultivator we have endeavored to provide several very essential features, and believe in these respects the tool will be found to excel any similar one offered.

Some, on the start, in operating a Pivot Wheel Cultivator, may find it a little awkward, but a steady, slow team and a little patience is all that is required to master the "trick," and after it is once learned, the working of the cultivator will be plain and simple.

A Pivot Wheel Cultivator has a great advantage over one having Fixed Wheels, in the time and minimum of room required to turn at the ends of rows. Swinging the wheels in the opposite direction to which the horses are turning, the Cultivator may be quickly carried over in position to cultivate the return row.

Ball Bearings.—It has wonderful ease of guidance, the pivots being vertical near the wheels, and the ends resting upon hardened steel balls.

Spring Pressure Lock-Down. To prevent the gangs from rising and slipping over hard places, we furnish both our Pivot and Fixed Wheel Cultivator with a spring pressure lock-down, strong enough to hold it to its work in stiff ground, but weak enough to allow the gangs to rise before damage could occur to them or the standards.

No. 60.—Price with Spring Pressure Lock-Down and Lever Gang Adjuster, as in cut, \$32.00

No. 61.—Price with Lever Gang Adjuster, Chain Lift in place of Spring Pressure Lock-Down, \$31.00

Packed Weight, 450 Pounds

Pivot Wheels.—For cultivation of crops on hillsides, or for work among very crooked and irregular rows, there probably can be no cultivator so well adapted to the purpose as one making use of what we may call Pivoted Wheels, the wheels being guided by the feet, and thus carrying the entire implement, with its gangs of teeth, to right or left, as desired. In



The Lever Gang Adjuster gives the operator immediate control of the width of his gangs. With this Adjuster the gangs are always at equal distance from the centre. One important feature of our Adjuster is that the gangs and necessarily the teeth are always kept parallel with each other, each tooth presenting its face squarely to the front at all times, and therefore will not throw soil toward the row when expanded, and from the row when narrowed up, as is the case when the gangs are pivoted at the front. Especially is this Adjuster valuable where a variety of crops is cultivated in a short time, or a succession of the same crop; or in short where the distance must be changed frequently.

The **Gangs** are of such design as to give great strength—very rigid, both with the Gang Adjuster and without, so as to instantly follow the directions given by the wheels. For cultivating potatoes and all close grown crops the outside part of gang is removed, together with its standard and tooth. Both gangs may be raised with one lever by taking the steel pins from the ends of the cross shaft, and placing them through the lever and shaft together.



Fig. 110

The Standards are made of good steel and can be instantly adjusted in depth or angle of cut or removed altogether by simply loosening one nut. Farmers tell us it is "sensible" and "just the thing." By this adjustment, the teeth can be set at a sharp angle and the soil cast to or from the crop as desired. By the teeth being adjusted in depth independent of each other, in cultivating young or small crops, the teeth close to the row can be set very shallow, while the teeth in the centre of row may be set to run deep.

Points.—The steel points sent out on the Cultivator are $2\frac{1}{2}$ inches in width and 10 inches long, while we have also, of the same length, points $1\frac{1}{4}$ and $3\frac{1}{2}$ inches in width.

The Axles, steel of course, are straight pieces, and each held in place by a single bolt, giving the farmer an opportunity of replacing same, when worn, with but little trouble or expense.

The Wheels are 42 inches high and as shown in cut have flanged tires to prevent slipping on hill sides. They are made of steel, and while they may appear light, yet they are very strong and durable. We wish to especially call your attention to the great adjustability of this tool, thus making it adapted to the use of all farmers, from the corn grower to the market gardener. The wheels can be set 50 inches wide or narrowed up to 37 inches.

The Seat is adjustable in height, so in the cultivation of small crops the operator can, without dismounting, uncover any plants he might by accident cover.

Attachments.

Fig. 116. This Fallow Tooth Attachment will fit our Nos. 60, 61, 50 and 51 "IRON AGE" Riding Cultivators, and when applied to these tools are perfect Fallow Cultivators. They are used largely in orchards, and in preparing land in the Fall for the sowing of grain. **Price \$1.00.**

Fig. 117. The Plows are made to fit any of our Riding Cultivators, except our No. 75, and they will do perfect work in turning earth away from the plant, in hilling up and for marking out rows. **Price, per pair, \$0.65.**

Fig. 110. Spring Hoes.—In some sections, where the soil is of rough character, it becomes quite a tax to replace the broken wooden pins and a Spring Hoe becomes a thing of necessity.

As will be readily seen, the standard of this tooth is entirely independent of the gang frame and can, therefore, be adjusted in every way, an unusual feature with spring trip teeth.

The break-joint is now adjustable by a set screw—a good feature. **Price, \$1.25 each.** May be applied regularly to all styles except No. 75. See note bottom page 23.

For our Riding Cultivators equipped with Spring Hoes (a set of 8) add to list \$4.50.

Fig. 118. By the use of our Disc Attachment, earth may be turned away from the crop or thrown to it without being necessary to cut deep and possibly injure the roots of the growing crop.

By the correct use of the Disc Attachment, wire, coffee, and similar grasses can be comparatively easily exterminated, while baked clay soil can be cultivated without danger of injury to the crop, and without the use of the fenders. When ordering Disc Attachment for our Nos. 60 and 61 Cultivators, call for No. 1.

Owing to the great efficiency of this attachment, we regret it cannot be applied to our Nos. 50 and 51 Fixed Wheel Riding Cultivators. **Price, per pair, \$2.50.**

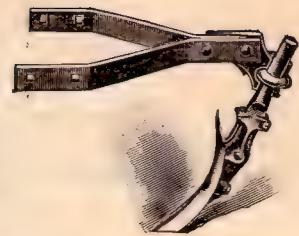


Fig. 116



Fig. 117

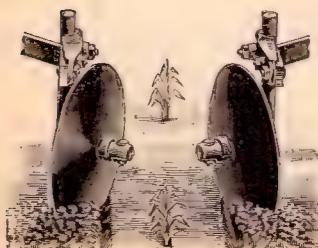


Fig. 118

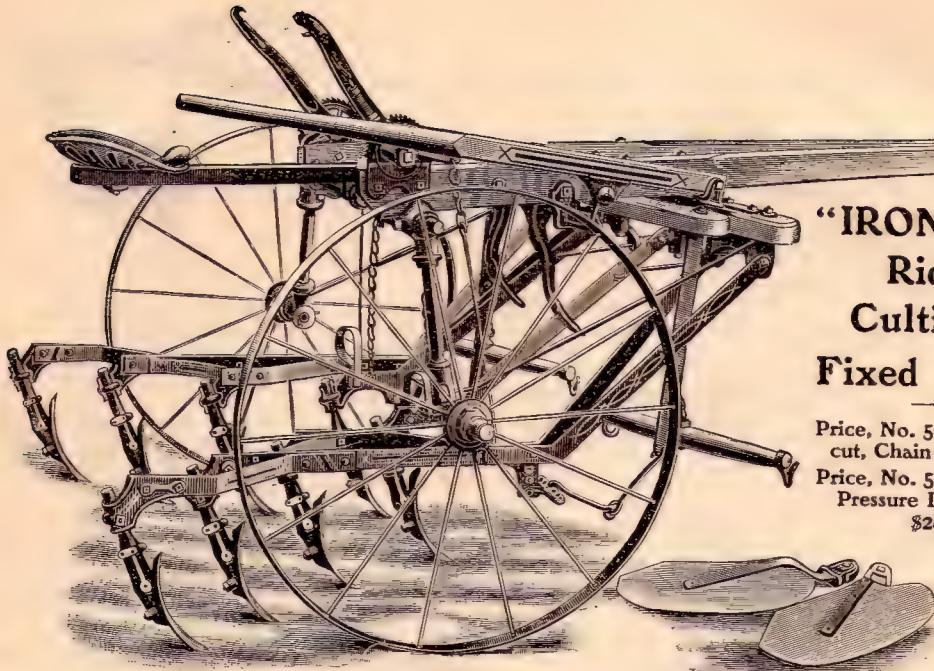


Fig. 122

For cultivation of crops on level or slightly rolling ground we offer our "IRON AGE" Fixed Wheel Cultivator as shown in Fig. 122

Our Patent Lever.—Even a few hours work on one of the old style tools will tell the user in the most convincing manner that the guidance of the gangs, or even the pair of independent teeth, by the feet, should be a thing of the past ; it is laborious and unsatisfactory work to make the best of it.

We offer, then, our patented lever arrangement, by which this wearisome work of guiding the teeth by the feet is almost entirely dispensed with. By the use of this *single lever* all misplaced hills are easily and quickly dodged.

Further than this, by the same lever the independent pair of teeth are so completely under the control of the operator that the two teeth can be opened out to pass a wide spreading plant; or, by simply depressing the lever, brought so closely together as to thoroughly cultivate the space between the hills. This is not, to our knowledge, attempted by any other implement on the market, and it is needless for us to point out to any intelligent farmer how capable it is of close, exact work among small plants. We know that "truckers" have been looking for and demanding just such a Cultivator. The front teeth are provided with a pair of foot loops, to be used in case of an unsteady team that requires the use of both hands in driving, and also at ends of rows for the same reason. Ordinarily the feet should be placed on the outside gangs, in order to give more pressure, when required. As shown by the cut, we have a hitch, adjustable in two ways—lower, for hard ground, and sideways, to overcome the leading of the plows.

The Standards are the same as used on our Pivot Wheel Cultivator, having the same adjustment in angle and depth.

The Wheels are made of best steel, and can be narrowed up to 39 inches and widened to 52 inches, thus making it like our Pivot Wheel, adapted to the cultivating of nearly all crops.

The Spring Pressure Attachment, as described on page 24, is also applicable to our Fixed Wheel Cultivator.

We furnish this tool when ordered, with **Fallow Tooth Attachment** as shown in Fig. 116, page 25. Price, \$1.00. Equipped with *Spring Hoes*. Fig. 110, page 25. Add to list \$4.50.

The Plows as shown in Fig. 117, page 25, can also be applied. Price, per pair, \$0.65

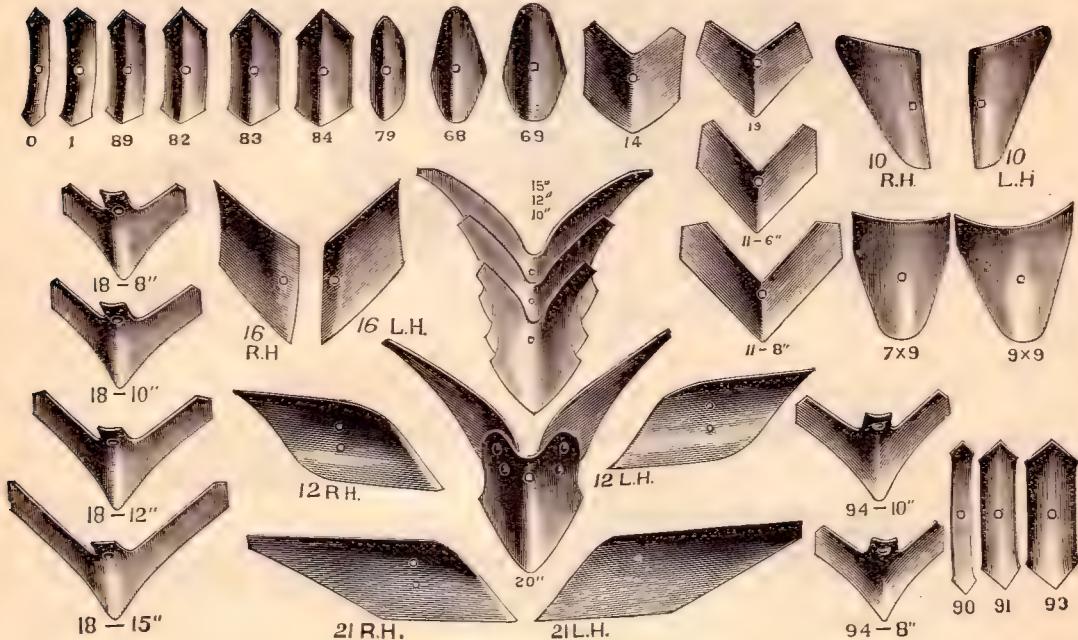
This riding Cultivator, in common with our Pivot Wheel, is made of best steel, wood, malleable and grey iron, and is finished handsomely.

The
No. 50
"IRON AGE"
Riding
Cultivator
Fixed Wheel

Price, No. 50, as shown in
cut, Chain Lift, \$27.00
Price, No. 51, with Spring
Pressure Lock-Down,
\$28.50

Packed
Weight
400 lbs.

"IRON AGE" Cultivator Points and Steels



The manufacture of Cultivator Points and Steels has been, and still is, a specialty with us.

All our "IRON AGE" Points, Steels, etc., are made of best steel, perfect in shape, well tempered and highly polished.

The Points, Sweeps and Furrowers, shown in first list below, all fit the "IRON AGE" Cultivators and Horse Hoes.



95-6
L. H.

No. 0, 1 1/4 inches . . .	\$0.10	No. 11, 6 inches . . .	\$0.25	No. 21, R. or L. . . .	\$0.50
" 1, 2 " . . .	.10	" 11, 8 " . . .	.30	" " 9x9 . . .	.40
" 89, 2 1/2 " . . .	.10	" 12, R. or L. . . .	.30	" " 9x9 . . .	.50
" 82, 3 " . . .	.11	" 14, 7 inches . . .	.25	10-inch Furrower . . .	.90
" 83, 3 1/2 " . . .	.13	" 16, R. or L. . . .	.25	12 " " . . .	1.10
" 84, 4 " . . .	.14	" 18, 8 inches . . .	.28	15 " " . . .	1.40
" 79, 2 1/2 " . . .	.12	" 18, 10 " . . .	.32	20 " Furrower, Adj.	1.75
" 68, 4 " . . .	.12	" 18, 12 " . . .	.38	Wings	
" 69, 4 1/2 " . . .	.14	" 18, 15 " . . .	.45		
" 10, R. or L. . . .	.25	" 19 . . . . .	.25		

The Points, Sweeps and Side Hoes mentioned below are styles and sizes used on our Riding Cultivators. These are each well adapted to the special work required of them and are attached by a single bolt, the Side Hoes having riveted to them malleable iron backs. The Points are ten inches in length.

No. 90, 1 1/4 inches . . .	\$0.18	No. 93, 3 1/2 inches . . .	\$0.22	No. 94, 10-inch Sweep . . .	\$0.32
" 91, 2 1/2 " . . .	.20	" 91, 8-inch Sweep . . .	.28	" 95, 6-in. Side Hoes, R. or L. .	.50

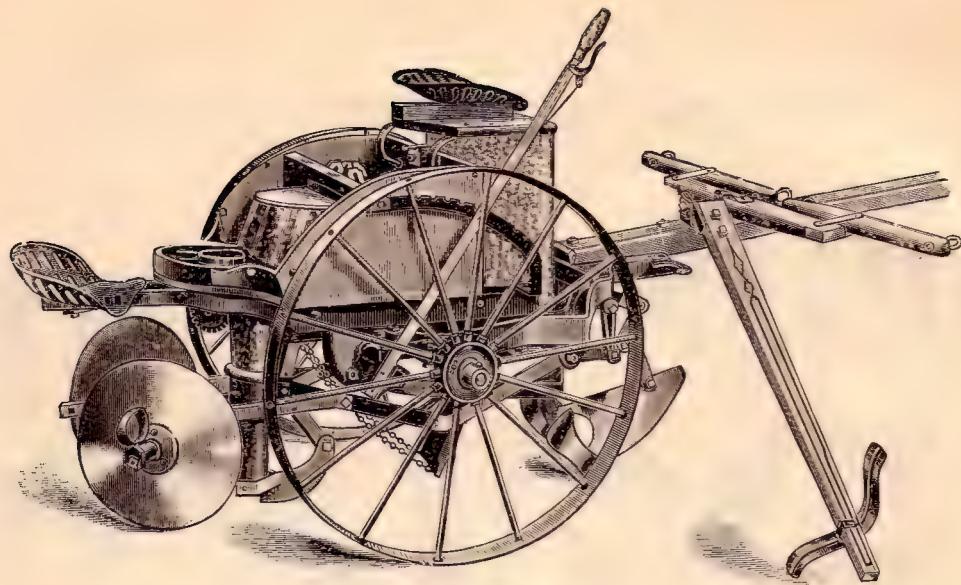


Fig. 66

The Improved-Robbins Potato Planter

Packed Weight, Nos. 1 and 1A, 735 pounds. Nos. 2 and 2A, 675 pounds.

The No. 1 Planter with Fertilizer Distributor (Plow with Shield) as shown in Fig. 66 . . .	\$70.00
The No. 1A Planter with Fertilizer Distributor (Plow with Disc see Fig. 142)	70.00
The No. 2 Planter without Fertilizer Distributor (Plow with Shield) as shown in Fig. 67 . .	60.00
The No. 2A Planter without Fertilizer Distributor (Plow with Disc see Fig. 142)	60.00
Corn, Bean and Pea Attachment	5.00
Leveler Attachment	0.85

Old Time Methods

It is needless to speak of the slow, laborious method of potato planting as practiced by the large majority of growers; of the consequent improvident waste of time at the opening of the busy season, and the interference caused by the uncertain weather of early spring. When the proper season arrives—when the weather is just right and the time just fits in with other business—the potato grower should be prepared to do his planting promptly and with as little delay as possible. On the other hand, the potato crop is so costly—costly in high-priced seed, thorough preparation of soil, frequent cultivation and application of insecticides, followed by expensive harvesting of the crop, it behoves the grower to “make haste slowly.” He wants machinery to aid him, but that machinery should be of such a character that the quality of work must be unquestioned.

Both Quality and Quantity.—It must be quality as well as quantity. With the Improved-Robbins, however, the farmer has the comfortable assurance of attaining both, easily planting with it from four to seven acres per day, and such perfection of potato planting was never before accomplished. It is simply ideal.

How it Works

The Plow.—This season, for the first, we offer our Improved-Robbins Potato Planter fitted either with an Opening Plow preceded by a Shield, as heretofore, or one preceded by a Rolling Coulter or Straight Disc, as shown in Fig. 142.

In some sections the Shield is preferable, while in others the Disc becomes a necessity for the satisfactory operation of the Planter.

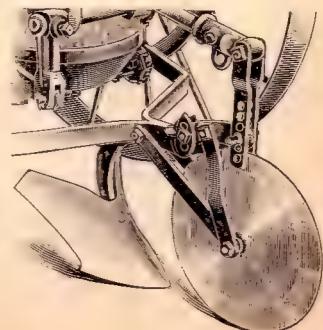


Fig. 142

Showing Disc in place of Shield

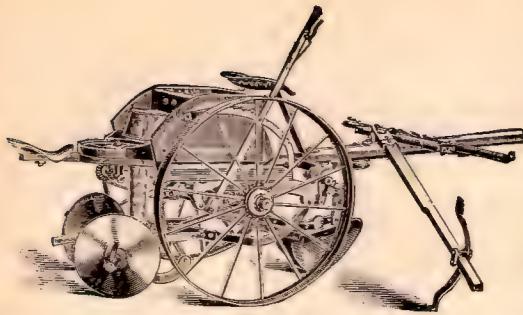


Fig. 67

Improved-Robbins without Fertilizer Distributor

the South. The Disc has another advantage over the Shield, in giving the Plow a better chance to scour; result, a lighter draft. In all cases, where a farmer does not have rocks or heavy stones with which to contend, we recommend him to purchase the Planter with the Rolling Coulter, which is either our No. 1A or No. 2A machine, depending upon whether the Planter is wanted with or without the Fertilizer Distributor. As shown on page 28 the price is the same.

The Plow furnished either with the Shield or Disc, throws out on each side a free furrow of loose soil with no packing or wedging to crowd the future growth of the crop, and has an independent adjustment by which its position can be changed to suit the different depth of furrowing in different soils. Immediately following the Plow comes the deposit of fertilizer (if used) in a broad stream across the bottom of the furrow.

A Perfect Fertilizer Distributor.—We wish to speak particularly of the Fertilizer Distributor on the Improved-Robbins, as we believe it to be beyond question the best method of distributing fertilizer yet adopted. The fertilizer is placed in a round hopper of galvanized iron, holding about one hundred pounds, and is fed downward through a central opening formed by a straight agitator shaft. This feeding is accomplished by a winged Scraper, which descends by its own gravity as the material is fed away, while the fertilizer falling upon a cone in a light, loose condition, is thrown by this cone outward on to a revolving disc, which in turn carries it to the gate opening at its edge. All waste of fertilizer when turning at ends of rows is avoided by a simple arrangement whereby the feeder can instantly close the gate. The capacity of the Distributor is up to a ton per acre and even more, depending, of course, largely upon the condition of the fertilizer. The amount sown is quickly and easily regulated by the adjustment of gate or change of sprocket wheels.

Dropping Seed.—Then follows the drill tube through which the seed is dropped, this tube being provided with a small shoe which opens a narrow groove in the bottom of the furrow and into which falls the seed. The small shoe also divides the fertilizer, preventing it from coming in direct contact with the seed and mixes it with the soil in passing. Then immediately following comes a pair of large steel discs, which cover the seed with light, loose soil, all in a nice, moist state, just in the right condition for starting a vigorous growth of the potato sprout.

No Injury to Seed.—The seed is prepared in the usual fashion for hand-planting, and placed in a hopper, where it is neither punctured nor injured in any manner while being deposited in the furrow below, so one may rest assured the seed, after it is planted, is in as good condition as when first placed in the machine. In the cutting (of the seed), either by hand or with a cutter, care should be taken to cut it as uniformly as possible.

The purpose of the Shield is to divide the soil for the Plow and to prevent injury to the machine. In striking a "fast" rock the blow is gradual, not sudden, thereby warning the driver to release the lever, and enable him to pass over the rock. While, in ground which is somewhat trashy, the Plow with Shield will prevent clogging, yet in case of long vines and very trashy ground, a sharp disc will do better work. The adaptation of our Planter to pass through ground without interference, where cow peas or a heavy growth of other vegetable matter has been previously plowed under, will be very gratifying, especially to the potato growers of

the South. The Disc has another advantage over the Shield, in giving the Plow a better chance to scour; result, a lighter draft. In all cases, where a farmer does not have rocks or heavy stones with which to contend, we recommend him to purchase the Planter with the Rolling Coulter, which is either our No. 1A or No. 2A machine, depending upon whether the Planter is wanted with or without the Fertilizer Distributor. As shown on page 28 the price is the same.

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Dropping Seed.—Then follows the drill tube through which the seed is dropped, this tube being provided with a small shoe which opens a narrow groove in the bottom of the furrow and into which falls the seed. The small shoe also divides the fertilizer, preventing it from coming in direct contact with the seed and mixes it with the soil in passing. Then immediately following comes a pair of large steel discs, which cover the seed with light, loose soil, all in a nice, moist state, just in the right condition for starting a vigorous growth of the potato sprout.

No Injury to Seed.—The seed is prepared in the usual fashion for hand-planting, and placed in a hopper, where it is neither punctured nor injured in any manner while being deposited in the furrow below, so one may rest assured the seed, after it is planted, is in as good condition as when first placed in the machine. In the cutting (of the seed), either by hand or with a cutter, care should be taken to cut it as uniformly as possible.



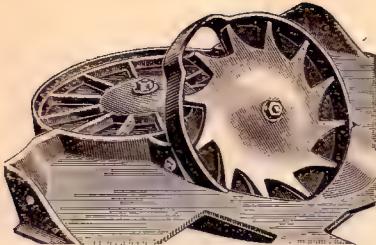


Fig. 115

Always remember that the more uniform the cutting of the seed, the more perfect the action of the Planter, the easier the work of the feeder, the better and more uniform the stand and future growth of the plants—Results, a better crop.

The Seed is surely put in.—After the placing of the seed in the hopper it is then carried by means of an elevator wheel, and deposited in the corresponding pocket of the revolving feed wheel. See Fig. 115. We have found it necessary, in order to suit the different sized cuttings of the seed, to furnish three sizes of elevator wheels; one for small cut seed, P. 129; one for medium, P.

107; one for large, P. 126. The knowing of which wheel to use for the elevation of the different sized cuttings must be left to the judgment of the operator. When too much seed is deposited by the elevator wheel, use a smaller pocketed wheel; when not enough, use a larger pocketed wheel. In actual operation from sixty to seventy-five per cent. of the seed is found to be correctly fed, leaving for the feeder only the supplementing, and correcting the operation of the machine; taking out the pieces where they are doubled, and putting in where missed. This feed wheel carries each successive piece of potato over the potato tube and drops it through to the furrow below. This gives the assurance that the seed is actually deposited—there can be no speculation as to whether a row has any seed in it; there are no misses; no doubles; no trouble on hillsides. Neither can any injury result from contact of seed with fertilizer, as the former is deposited below the fertilizer, while the latter is also thoroughly mixed with the soil. Fig. 115 clearly shows the method by which the seed is elevated and deposited into the revolving feed wheel. It is from this wheel as it revolves the boy makes the necessary corrections, taking out from its pockets one piece where there are two, and putting one piece in where there are none.

The Covering.—The discs are conveniently adjustable in every way and cover the row with a full free covering in the most perfect manner possible and one that is a pleasure and a delight to the grower. He knows that his seed is in the center of the furrow, not on one side, giving chance for “greened” potatoes, and covered with an ample covering, giving a good chance for harrowing down, thus getting his ground and crop in first-class shape for future cultivation.

Distance Apart.—The speed of the wheel which drops the potatoes is likewise regulated by a simple change of sprocket wheels, those sent out with the Planter dropping at distances of about 12, 14, 15½, 17, 18½ or 20 inches.

Simple and Easy.—The handling of the Planter is exceedingly simple and easy, the movement of one lever stopping both potato and fertilizer feed and at the same time raising the entire gang of opening plow, potato tube and covering discs entirely free from the ground. Provision is made for adjustment of the lever to suit the “dead furrows” or “backings” there may be in the field.

Other Work, Cabbage Rows, Etc.—We would also emphasize the worth of this machine for use in making up rows for cabbage, etc., doing the marking, furrowing, sowing the phosphate and hillling so perfectly that it is a pleasure to see the work done so well and so economically.

Our New Seed Attachment (see Fig. 68) will sow corn, beans and peas in continuous rows, or drop corn and beans in hills at 12, 14, 15½, 17, 18½ and 20 inches apart, or even closer by applying the small sprocket wheels intended for changing the speed of the fertilizer distributor to the shaft of the feed wheel.

Our Leveler Attachment, also shown in Fig. 68, is a capital thing in leveling and smoothing the rows.

Perfect in Principle and Construction.—We claim the Planter to be one of the most thoroughly constructed machines offered to the farming public; it is carefully made of the very best materials and consequently is strong, durable and thoroughly practical.

You cannot afford to be without it.—No potato grower, if he plants but a few acres, can afford to be without it. If he clings to the old methods of hand-planting, he is handicapped—he is really almost out of the race—he cannot successfully compete with modern machinery. With the Improved-Robbins he has all the advantages of hand-planting with none of its disadvantages. Dr. W. I. Chamberlain says, in the Ohio Farmer: “It is hand-dropping, spaced with unerring accuracy by machinery.”

Send for Special Catalogue giving Testimonials.

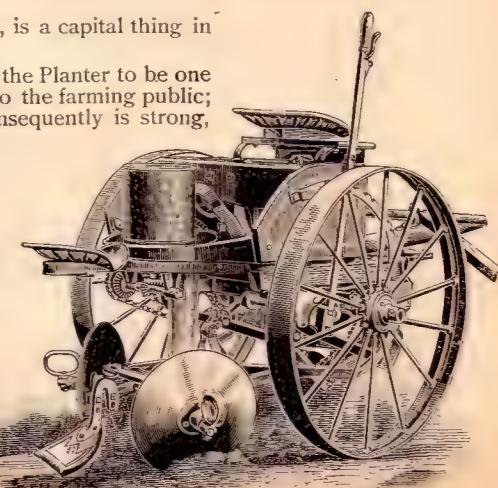


Fig. 68

The "IRON AGE" Variety Machine

PRICE

As a Row Maker, \$40.00

Seed Attachment, \$6.00

Marker Attachment, \$6.50

Weight Complete, 500
Pounds

In this machine we have combined a double mould-board plow, a fertilizer distributor, a coverer, a pea, bean and corn drill and a two-row furrower.

What it will do.—It will open furrows, distribute fertilizers, plant corn, peas and beans and cover in one operation or separately. Mark and open two furrows.

The Opening Plow is a double mould-board plow which lifts the soil and throws it out loose on both sides. It will run eight inches deep or as shallow as desired.

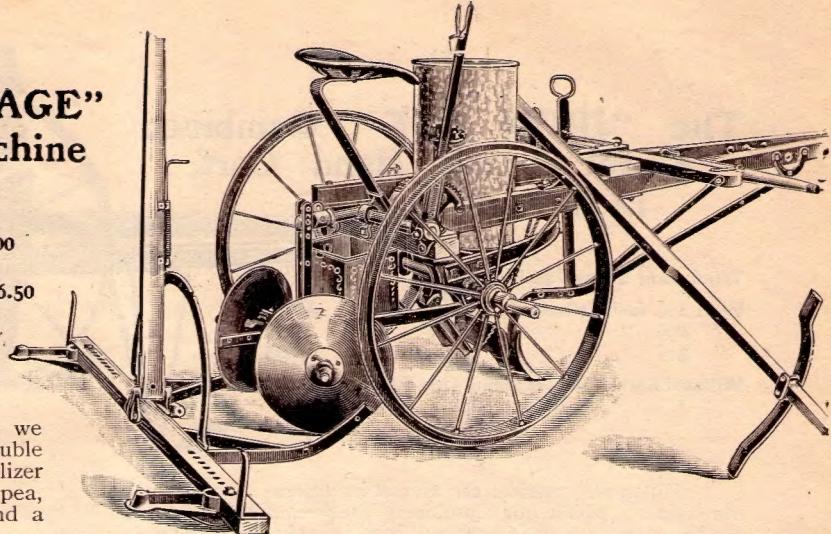
The Fertilizer Distributor.—The capacity of the fertilizer hopper is about one hundred pounds and its discharge is accomplished by a winged scraper, which descends by its own gravity as the material is fed away, while the fertilizer, falling upon a cone below is thrown outward on to a revolving disc, which in turn carries it to the gate opening at its edge. The fertilizer then passes down through the spout into the chute or spreader where it is divided into two streams, in order that the fertilizer shall not fall into the bottom of the furrow, but on both sides. Waste of fertilizer at ends of rows is avoided by a simple arrangement whereby the driver can instantly close the gate.

The Covering Discs are conveniently adjustable in every way and cover the row with a full, free covering in the most perfect manner possible.

The Wheels are made of steel, 32 inches high, with angle-shaped tires 3 inches broad, to prevent the machine from slipping on hillsides and to cause it to run steadier on the level. In order to insure correct working of the machine the wheels are adjustable on the axle from 36 to 50 inches wide, so they can be set at various distances to accommodate the furrows made.

The Seed Attachment has been improved, its new position being under the seat close to the ground between the gangs, as is readily seen by referring to cut. It will sow peas, beans or corn in drills or drop in hills.

The Marker Attachment.—The discs and gang which are used on the machine as a row maker are removed by drawing three pins and the marker frame attached by making use of the same pins. The same discs and ratchet castings that are used on the gang as a row maker are placed on the arms of the marker attachment. The depth of running of the discs can be finely and instantly adjusted by the lever, and entirely thrown out of the soil at the ends of the rows. After the discs are raised the driver can easily raise the marker pole without dismounting.



The "IRON AGE" Combined Barrel Truck, Hand Cart, Leaf Rack

Truck and Barrel as in cut,

With 1½ inch Wheels,	\$8.75
" 2½ " "	9.50
" 3½ " "	10.25

Without Barrel, but including One Pair Trunnions,
deduct, \$2.25



Fig. 88

When we consider the almost innumerable uses to which our Combined Truck and Hand-cart can be applied, its "handiness" and the immense amount of time and hard labor saved by its use, it is not a matter of surprise that it is steadily growing into popular favor. It is one of those articles that cause the user to wonder how he ever did without it, as it really becomes indispensable when once used.

We are the original inventors and makers of this style of Barrel Truck, and believe we still excel all imitators. The cut plainly shows the operation of the truck. The barrel is raised from the ground, carried to the place desired and *instantly detached*, all *without handling*. The weight being balanced over the axle, no lifting or down pressure is needed in transportation. Other barrels for various purposes can be used as needed, extra trunnions being furnished if desired, which can be readily attached to any oil or spirit barrel, thus increasing indefinitely the value of the truck.

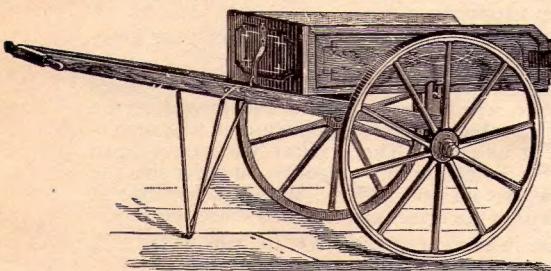


Fig. 89

Our trucks are equipped with *steel* wheels—durable, strong and handsome. We have wheels of 1½, 2½ and 3½ inches tread, *but always send truck wheels 2½ inches, unless otherwise specified.*

No castings to break; all iron of best wrought.

The width of this truck from outside to outside of hubs is 39½ inches.

Fig. 89.—We also supply a Box (as shown in above cut) with trunnions and spring catch, making a very superior *dumping* hand-cart. Length, 37 inches; width, 23½ inches; depth, 8 inches. Price, alone, \$3.00



Fig. 63

Leaf Rack. Price, alone \$5.00—We have recently added a very light Leaf Rack, which will be found extremely convenient for the cartage of leaves, cut grass from the lawn, etc.

Knocks down flat, taking very little room for storage. This Leaf Rack has an average width of 28 inches by average length of 42 inches and is 21 inches deep.

The Sprinkler Attachment. Price, \$3.25—The Barrel Truck as a Sprinkler is invaluable for watering lawns and sprinkling walks about houses, railroad stations, cemeteries, etc. It consists of a perforated wrought-iron pipe, bent on a circle, thus throwing the water outside the wheels. The water is turned on and off by a hand wheel and ball valve.

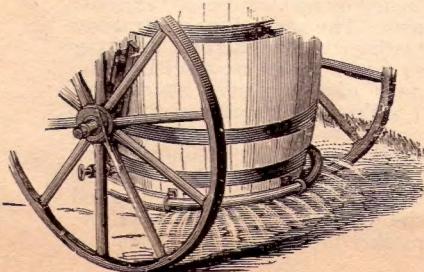


Fig. 48

BATEMAN'S HAND GARDEN PLOW.

This is one of those quiet, effective tools that stand against the garden fence, *always ready for duty*. Low in price, simple, never needing costly repairs. While it is useless to claim for it the ability of breaking ground in the Spring, it is very useful in opening furrows for seeds and manures, for covering them, and for tending the crops afterwards. Built on a very neat model; highly-polished steel mold-board, is carefully made and handsomely finished. Has side handle, and being regulated in depth by a simple thumb nut, is the most manageable tool of the kind yet produced.

Fig. 39.
Price, \$13.00 doz.



Fig. 40. TRANSPLANTING TROWEL. Solid Steel.
Largely used by Truckers in transplanting sweet potatoes, cabbage, etc., etc. Price, \$3.75 doz.

GARDEN DIBBLE.
Price, \$3.25 doz.

Fig. 45. ASPARAGUS KNIFE.
Price, \$3.00 doz.

Fig. 128.

Fig. 43. VINE CUTTER. Price, \$6.00 doz.
For cutting vines of sweet potatoes. Saves the back.

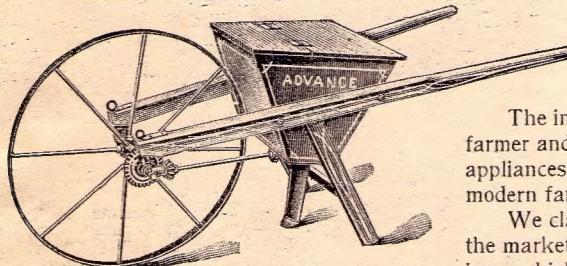


Fig. 56.

"ADVANCE" FERTILIZER DRILL.
Price, \$6.00 each.
Packed Weight, 40 Pounds.

The increased use of commercial fertilizers has fairly compelled the farmer and planter of the present day to provide himself with improved appliances for properly and economically distributing these adjuncts of modern farming.

We claim the "Advance" to be the best low-priced distributor on the market, and would call attention to its distributing disc of *galvanized iron*, which can neither break nor rust; also to the wrought-iron wheel, light and strong.

A shut-off, to prevent the escape of fertilizer when wheeling around end of row, is a late improvement; one of those little things which go far, however, in making a tool valuable.

A first-class tool for the drilling of peas and corn.

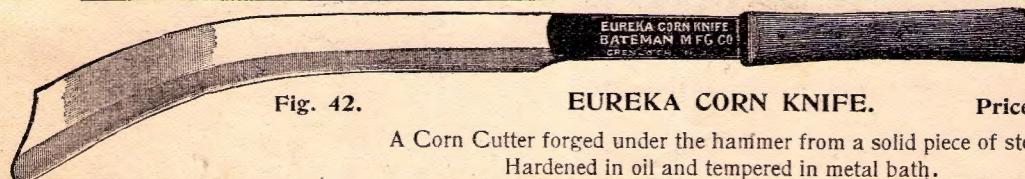


Fig. 42.

EUREKA CORN KNIFE.

Price, \$3.60 doz.

A Corn Cutter forged under the hammer from a solid piece of steel.
Hardened in oil and tempered in metal bath.

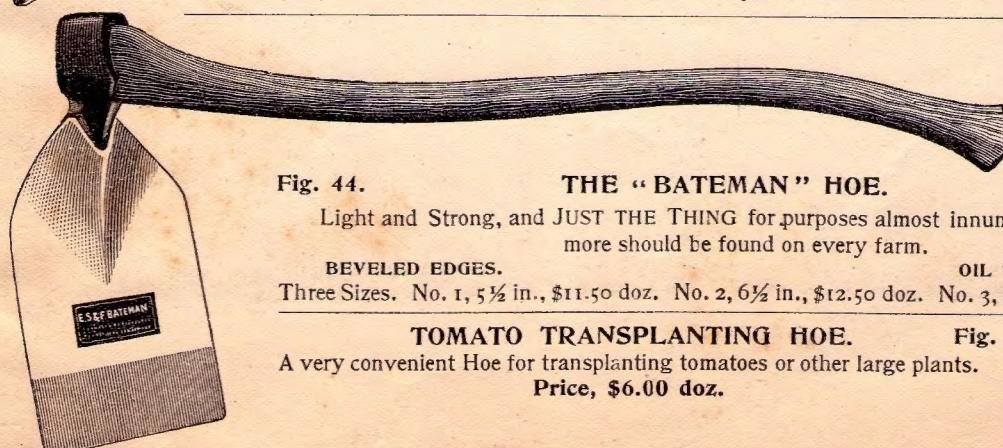


Fig. 44.

THE "BATEMAN" HOE.

Light and Strong, and JUST THE THING for purposes almost innumerable. One or more should be found on every farm.

BEVELED EDGES.

OIL TEMPERED.

Three Sizes. No. 1, 5 1/2 in., \$11.50 doz. No. 2, 6 1/2 in., \$12.50 doz. No. 3, 8 in., \$13.50 doz.

TOMATO TRANSPLANTING HOE.

A very convenient Hoe for transplanting tomatoes or other large plants.
Price, \$6.00 doz.

Fig. 41.

